

Appendices

Appendix A

NOVEMBER 1986 BALLOT MEASURES

A-2

C-065506

C-065506

12461

Aug. 16, 21

**NOTICE OF ELECTION
AND**

MEASURES TO BE VOTED ON

Notice is hereby given that a Special Municipal Election consolidated with the Statewide General Election will be held in the City of Stockton, on Tuesday, November 4, 1986.
Notice is hereby given that the following measures are to be voted on at said November 4, 1986 Election.

Resolution No. 86-0498

STOCKTON CITY COUNCIL

RESOLUTION DIRECTING SUBMISSION TO THE QUALIFIED VOTERS OF THE CITY OF STOCKTON MEASURES TO AMEND ORDINANCE NO. 3142-C.S., ADOPTED BY THE INITIATIVE PROCESS, WHICH PURPORTED TO LIMIT THE GROWTH OF THE CITY OF STOCKTON BY REMOVAL FROM THE CITY'S GENERAL PLAN OF ALL AREAS DESIGNATED MUNICIPAL LANDS RESERVE TOGETHER WITH CERTAIN ENUMERATED GOALS AND POLICIES AND CALLING A SPECIAL MUNICIPAL ELECTION.

BE IT RESOLVED BY THE COUNCIL OF THE CITY OF STOCKTON, AS FOLLOWS:

SECTION 1. There be submitted to the qualified voters of the City of Stockton at the Special Municipal Election of November 4, 1986, the following measures for the amendment of Ordinance No. 3142-C.S., adopted by the Initiative process.

MEASURE E

The people of the City of Stockton do ordain as follows:
SECTION 1 of Ordinance No. 3142-C.S., adopted by the Initiative process is hereby amended by deleting therefrom that certain area of approximately 92 acres; bounded on the north by Hammer Lane, on the east by a property line beginning at a point on Hammer Lane 2,000 feet west of Highway 99 extending southerly 1,263 feet, and on the south by a property line extending 4,000 feet in a southwesterly direction to point of intersection with the City limit line and on the west by the existing City limit line. Said area is hereby restored to the City of Stockton General Plan and the authority of the Planning Commission and City Council to facilitate development. This measure may be referred to as Stockton Auto Center.

MEASURE F

The people of the City of Stockton do ordain as follows:
SECTION 1 of Ordinance No. 3142-C.S., adopted by the Initiative process is hereby amended by deleting therefrom that certain area of approximately 43 acres, generally bounded on the south by Hammer Lane, on the north and west by the East Bay Municipal Utility District, and on the east by the Highway 99 Frontage Road except those various commercial and residential developed properties in the northwest quadrant of Hammer Lane and Highway 99 Frontage Road. Said area is hereby restored to the City of Stockton General Plan and the authority of the Planning Commission and City Council to facilitate development. This measure may be referred to as the Stockton Christian Life Center.

MEASURE G

The people of the City of Stockton do ordain as follows:
SECTION 1 of Ordinance No. 3142-C.S., adopted by the Initiative process is hereby amended by deleting therefrom that certain area of approximately 360 acres bounded on the north by Bear Creek, on the west and south by Mosher Slough and on the east by the existing City limits some 1,200 feet west of Interstate 5 Freeway. Said area is hereby restored to the City of Stockton General Plan and the authority of the Planning Commission and City Council to facilitate development. This measure may be referred to as Harbor Cove.

MEASURE H

The people of the City of Stockton do ordain as follows:
SECTION 1 of Ordinance No. 3142-C.S., adopted by the Initiative process is hereby amended by deleting therefrom that certain area of approximately 1,318 acres bounded on the north by Eight Mile Road, Oak Grove Regional Park and a property line 2,462a feet north of Bear Creek, on the east by Thornton Road and a property line 2,617a feet east of Thornton Road, on the south by Bear Creek and on the west by a property line extending 5,042a feet from Eight Mile Road to a point at the confluence of Bear Creek and Mosher Slough; previously deleted from the City of Stockton General Plan by Ordinance No. 3142-C.S., be restored to said General Plan and the authority of the Planning Commission and City Council to facilitate development. This measure may be referred to as Spanos Park.

MEASURE I

The people of the City of Stockton do ordain as follows:
SECTION 1 of Ordinance No. 3142-C.S., adopted by the Initiative process is hereby amended by deleting therefrom that certain area of approximately 520 acres bounded on the north by a property line 2,104a feet north of Morada Lane, on the east by Highway 99, on the south by a property line varying in distance of from 1,160a feet to 3,092a feet south of Morada Lane and on the west by the Southern Pacific Railroad tracks; previously deleted from the City of Stockton's General Plan by Ordinance No. 3142-C.S., be restored to said General Plan and the authority of the Planning Commission and the City Council to facilitate development. This measure may be referred to as Morada Lane.

MEASURE J

The people of the City of Stockton do ordain as follows:
SECTION 1 of Ordinance No. 3142-C.S., adopted by the Initiative process is hereby amended by deleting therefrom that certain area of approximately 1,200 acres bounded on the north by Fourteen Mile Slough, on the east by Smith's Levee, on the south by the Calaveras River and on the west by Ten Mile Slough; previously deleted from the City of Stockton General Plan by Ordinance No. 3142-C.S., be restored to said General Plan and the authority of the City Planning Commission and the City Council to facilitate development. This measure may be referred to as Brookside Community.
2. Copies of said proposed measures shall be published in the Stockton Record in accordance with Section 34461 of the Government Code.
3. The City Clerk of the City of Stockton is hereby authorized and directed to cause copies of the text of said measure to be printed in convenient pamphlet form and in type of not less than ten-point and to cause copies thereof to be mailed to each of the qualified voters of said City at least ten (10) days prior to said election.
4. A synopsis of said proposed measure shall be presented on the Special Municipal Election ballot and will read as follows:

MEASURE E STOCKTON AUTO CENTER	
Shall that certain area of approximately 92 acres; bounded on the north by Hammer Lane, on the east by a property line beginning at a point on Hammer Lane 2,000 feet west of Highway 99 extending southerly 1,263 feet, and on the south by a property line extending 4,000 feet in a southwesterly direction to point of intersection with the City limit line and on the west by the existing City limit line; previously deleted from the City of Stockton's General Plan by Ordinance No. 3142-C.S., be restored to said General Plan and the authority of the Planning Commission and City Council to facilitate development?	YES
	NO
MEASURE F STOCKTON CHRISTIAN LIFE CENTER	
Shall that certain area of approximately 43 acres, generally bounded on the south by Hammer Lane, on the north and west by the East Bay Municipal Utility District, and on the east by the Highway 99 Frontage Road except those various commercial and residential developed properties in the northwest quadrant of Hammer Lane and Highway 99 Frontage Road; previously deleted from the City of Stockton's General Plan by Ordinance No. 3142-C.S., be restored to said General Plan and the authority of the Planning Commission and City Council to facilitate development?	YES
	NO
MEASURE G HARBOR COVE	
Shall that certain area of approximately 360 acres, bounded on the north by Bear Creek, on the west and south by Mosher Slough and on the east by the existing City limits some 1,200 feet west of Interstate 5 Freeway previously deleted from the City of Stockton's General Plan by Ordinance No. 3142-C.S., be restored to said General Plan and the authority of the Planning Commission and City Council to facilitate development?	YES
	NO
MEASURE H SPANOS PARK	
Shall that certain area of approximately 1,318 acres bounded on the north by Eight Mile Road, Oak Grove Regional Park and a property line 2,462a feet north of Bear Creek, on the east by Thornton Road and a property line 2,617a feet east of Thornton Road, on the south by Bear Creek and on the west by a property line extending 5,042a feet from Eight Mile Road to a point at the confluence of Bear Creek and Mosher Slough; previously deleted from the City of Stockton General Plan by Ordinance No. 3142-C.S., be restored to said General Plan and the authority of the Planning Commission and City Council to facilitate development?	YES
	NO
MEASURE I MORADA LANE	
Shall that certain area of approximately 520 acres bounded on the north by a property line 2,104a feet north of Morada Lane, on the east by Highway 99, on the south by a property line varying in distance of from 1,160a feet to 3,092a feet south of Morada Lane and on the west by the Southern Pacific Railroad tracks; previously deleted from the City of Stockton's General Plan by Ordinance No. 3142-C.S., be restored to said General Plan and the authority of the Planning Commission and the City Council to facilitate development?	YES
	NO
MEASURE J BROOKSIDE COMMUNITY	
Shall that certain area of approximately 1,200 acres bounded on the north by Fourteen Mile Slough, on the east by Smith's Levee, on the south by the Calaveras River and on the west by Ten Mile Slough; previously deleted from the City of Stockton General Plan by Ordinance No. 3142-C.S., be restored to said General Plan and the authority of the City Planning Commission and the City Council to facilitate development?	YES
	NO

SECTION 2. (a) A Special Municipal Election is hereby called to be held in the City of Stockton on Tuesday, November 4, 1986, (consolidated with the State of California General Election) for the purpose of submitting to the qualified electors of said City the Measure set forth in Section 1 of this Resolution to amend Ordinance No. 3142-C.S.

(b) Said Special Municipal Election hereby called shall be held and conducted, and the votes canvassed and the returns thereof made, and the results thereof ascertained and determined as herein provided, and in all particulars not prescribed in this Resolution, said Special Municipal Election shall be held as provided for in the Charter of said City and in all particulars not provided for therein, said election shall be held as provided by law for the holding of Special Municipal Elections in the City of Stockton, and otherwise in accordance with the Elections Code of the State of California.

(c) All persons qualified to vote at Municipal Elections in said City of Stockton on the day of the election herein provided for shall be qualified to vote upon said measures hereby proposed by the City Council of the City of Stockton on its own motion and submitted at said Special Municipal Election.

(d) The polls at the polling places hereinafter designated for said Special Municipal Election shall be opened at 7:00 o'clock a.m. of said day of election and shall be kept open continuously thereafter until 8:00 o'clock p.m., of said day of election, when the polls shall be closed (except as otherwise provided by law), and the election officers shall thereupon proceed to canvass the ballots cast.

(e) Said Special Municipal Election hereby called shall be and is hereby consolidated with the State of California General Election to be held in San Joaquin County in said City of Stockton on the 4th day of November, 1986, as required by law and pursuant to the order and call of the Honorable George Deukmejian, Governor of the State of California, and the Board of Supervisors of the County of San Joaquin is authorized to canvass the returns of said Special Municipal Election with respect to the votes cast in the City of Stockton; and the election precincts, polling places and officers of election within the area of the City of Stockton for said Special Municipal Election hereby called shall be the same as those selected and designated by the Board of Supervisors of the County of San Joaquin for said General Election, and set forth or to be set forth in the notice of the election officers and polling places for

said General Election published or to be published by the County Clerk of San Joaquin County pursuant to the Elections Code to which notice reference is hereby specifically made for a description of the precincts, polling places and officers of the Special Municipal Election hereby called; provided, however, that no person not a qualified voter of the City of Stockton shall be permitted to vote at said Special Municipal Election hereby called.

(f) Only one form of ballot shall be used at said General Election and said Special Municipal Election consolidated therewith, which, in addition to all other matters required by law to be printed thereon, shall state the Measures as set forth in Section 1 hereof. Each voter may vote on said Measures. Absent voter ballots setting forth said measures shall be issued to all qualified electors residing within the City of Stockton entitled thereto in the manner provided by law, and such absent voter ballots shall likewise be canvassed, or caused to be canvassed, by the Board of Supervisors of San Joaquin County. The votes cast for and against said measures shall be counted separately, and if a majority of the qualified voters voting on each of the proposed measures vote in favor thereof, such measures shall be deemed ratified.

(g) At the next regular meeting of the City Council of the City of Stockton occurring after the returns of said Special Municipal Election have been canvassed or caused to be canvassed by the Board of Supervisors of San Joaquin County and the certification of the results thereof to the said City Council, or at a special meeting called thereafter for such purpose, the City Council shall cause to be spread upon its minutes a statement of the results of said Special Municipal Election as ascertained by said canvass.

PASSED, APPROVED and ADOPTED this 4th day of August, 1986.

S/VICE MAYOR COALE
for BARBARA FASS, Mayor
of the City of Stockton

ATTEST:
/S/ FRANCES HONG
FRANCES HONG, City Clerk
of the City of Stockton

Appendix B

CITY OF STOCKTON
GROWTH CONTROL ORDINANCE
NO. 3142 (MEASURE A)

B-1

C - 0 6 5 5 0 9

C-065509

10-10-55

10-10-55

B-2

C-065510

C-065510

ORDINANCE NO. 3142-C.S.
AN ORDINANCE ADOPTED BY THE INITIATIVE PROCESS PURPORTING TO LIMIT THE GROWTH OF THE CITY OF STOCKTON BY REMOVAL FROM THE CITY'S GENERAL PLAN OF ALL AREAS DESIGNATED MUNICIPAL LANDS RESERVE TOGETHER WITH CERTAIN ENUMERATED GOALS AND POLICIES.

Be it ordained by the City Council of the City of Stockton, as follows:

SECTION I.

The official plans of the City of Stockton adopted by the Stockton City Council in Resolution number 35,599, dated September 11, 1978, are hereby amended by the deletion of all sections designated Municipal Lands Reserve from the map adopted pursuant to said resolution and by the deletion of the following language from the policy document adopted pursuant to said resolution:

Goal 3

To provide for Stockton's future growth needs by reserving land in sufficient quantities to accommodate the potential of accelerated demand.

Policies:

1. It is the City of Stockton's intent to set aside lands in Municipal Lands Reserve. The reserve is to serve as an area into which future developments can be directed when it has been demonstrated that the demand for land exceeds the supply of economically developable properties designated for urbanization on the City of Stockton's adopted general plan map. Before development can take place in the Municipal Lands Reserve, it must be first demonstrated that the capacity of those lands designated for urbanization on the general plan map has been reduced to the point that development of those remaining lands is no longer economically feasible.
2. Before urbanization may be considered in the Municipal Lands Reserve, an amendment to the City's adopted Land Use Element of the General Plan must first be approved by the City Council.
3. Before the General Plan can be amended to permit urbanization in the Municipal Lands Reserve, it must first be demonstrated that the proposal is contiguous to existing urbanization and that it will not exceed the service capacity of existing municipal utilities and roadways.
4. New development occurring on those lands presently designated for urbanization on the General Plan map shall be constructed with sufficient utility line and roadway capacity to

accommodate growth that may occur in the Municipal Lands Reserve.

5. Before development in the Municipal Lands Reserve can be approved, the crossings of all natural or man-made barriers shall be constructed at no cost to the City with sufficient capacity to accommodate growth that may occur in the Municipal Lands Reserve.
6. In establishing the Municipal Lands Reserve, it is the City's intention to identify an area which supports the principle that urban development should only occur within a municipality. The Municipal Lands Reserve is thus created as a means of serving notice to San Joaquin County that an area has been set aside in which only those developments sanctioned by the City are to be approved.
7. When urbanization is to be considered in the Municipal Lands Reserve, priority construction consideration should first be given to those lands east of the Southern Pacific Railroad where there exists in adjacent lands municipal services networks and roadways with an acceptable level of capacity to accommodate additional urbanization.
8. No development of territory within the Municipal Lands Reserve shall be approved until a threshold level of 16,000 additional dwelling units (as measured by construction permits issued) have been constructed or started within the areas designated for urbanization on the City of Stockton's adopted general plan map.
9. Subject to a General Plan amendment and notwithstanding the above eight criteria; development of parcels of 50 acres or more substantially contiguous to existing development or planned communities consisting of parcels of 200 acres or more, may be approved within the Municipal Lands Reserve.

SECTION II. EFFECTIVE DATE

This ordinance shall take effect and be in full force from and after thirty (30) days from its final passage.

CERTIFICATE

This is to certify that Ordinance No. 3142-C.S. was passed to print by the City Council of the City of Stockton, on the 11th day of December 1978, by the following vote:

Ayes—Councilmen Clayton, Madden, Nahors, O'Brien, Paige, Ramos, Sousa, White and Mayor Rue.
Noes—None.
Absent—None.

Stockton, Cal., December 11, 1978.

JORTH M. JARRETT,
City Clerk of the City of Stockton
L87C Dec. 15

B-4

C - 0 6 5 5 1 2

C-065512

Appendix C

ORDINANCE NO. 058-87

C-1

C - 0 6 5 5 1 3

C-065513

C-2

C - 0 6 5 5 1 4

C-065514

Effective date of Ordinance AUG 27 1987

L7818 July 24
ORDINANCE NO. 054-87
AN ORDINANCE RECONFIRMING
AND CONTINUING THE PRACTICE
OF REQUIRING VOTER
APPROVAL PRIOR TO DEVELOPMENT
OF ORDINANCE 3142
LANDS.

BE IT ORDAINED BY THE CITY
COUNCIL OF THE CITY OF STOCK-
TON, AS FOLLOWS:

Section 1. All those lands referenced as Municipal Lands Reserve in City of Stockton Ordinance No. 3142-C.S. and so designated by the official plans of the City of Stockton adopted by the Stockton City Council in Resolution No. 35,599 and the implementing map therefor shall, pursuant to Article XXXIV, Section 4 of the Stockton City Charter, be planned for and shown on the City of Stockton General Plan land use element by appropriate land use designation, followed in each case by the further designation "provisional." It shall be necessary, prior to consideration for approval by the City of any proposed subdivision, development, rezoning and/or rezoning of such lands that the voters of the City at a regular or special election approve the deletion of the designation "provisional" from the General Plan designation of the particular lands proposed to be subdivided, developed, rezoned and/or rezoned.

Section 2. Measures to remove the "provisional" designation from such lands through a General Plan amendment in order to allow subsequent subdivision, development, rezoning and/or rezoning of such lands may be placed on the ballot either by City Council action as referendum measures pursuant to Article XXVII of the Stockton City Charter or by initiative petition pursuant to Article XXVII of the Stockton City Charter.

Section 3. This ordinance shall not affect or be applicable to those lands which have heretofore been the subject of the following City ballot measures:

Measure A November, 1984 ballot
Measure F June, 1986 ballot
Measure E November, 1986 ballot
Measure F November, 1986 ballot
Measure G November, 1986 ballot
Measure H November, 1986 ballot
Measure I November, 1986 ballot
Measure J November, 1986 ballot

Section 4. This ordinance shall be of no further force and effect after July 31, 1988.

Section 5. This ordinance shall take effect and be in full force from and after thirty (30) days from its final passage.

CERTIFICATE

This is to certify that Ordinance No. 054-87 was passed to print by the City Council of the City of Stockton, on the 20th day of July 1987, by the following vote:

AYES: Councilmembers Bonner, Clayton, Lang, Linnerman, McGaughey, Nisby, Oliva, Vice Mayor Coale, and Mayor Fass

NOES: None

Absent: None

Stockton, Ca. July 21, 1987

/s/ FRANCES HONG
City Clerk of the
City of Stockton

This is to certify that on the 21st day of July 1987 I caused Ordinance No. 054-87 with the ayes and noes, to be published in the Stockton Record, a daily newspaper of general circulation, published and circu-

C-4

C - 0 6 5 5 1 6

C-065516

COMMON AND SCIENTIFIC NAMES OF PLANT
SPECIES MENTIONED IN THE TEXT

Appendix D

D-1

C-065517

C-065517

100
101
102
103

104
105
106
107

D-2

C - 0 6 5 5 1 8

C-065518

The common and scientific names of plant species referred to in the text.

Common Name	Scientific Name
bindweed	Convolvulus arvensis
black mustard	Brassica nigra
bullrush	Scirpus acutus
buttonbush	Cephalanthus occidentalis
California hisbiscus	Hibiscus californicus
cattails	Typha latifolia
chickory	Cichorium intybus
common reedgrass	Phragmites communis
cottonwood	Populus fremontii
creeping wild rye	Elymus triticoides
curly dock	Rumex crispus
delta tule pea'	Lathyrus jepsonii
dock	Rumex triangularis
duckweed	Lemna minor
elodea	Elodea canadensis
English walnut	Juglans regia
Eucalyptus	Eucalyptus sp.
fig	Ficus carica
Himalaya berry	Rubus procerus
Italian ryegrass	Lolium multiflorum
Johnson grass	Sorghum halpense
knot grass	Paspalum distichum
marsh pennywort	Hydrocotyl ranunculoides
mugwort	Artemisia douglasiana
Mulberry	Morus sp.
Oregon ash	Fraxinus latifolia
Mason's lilaeopsis	Lilaeopsis masonii
pacific rush	Juncus effusus var. pacificus
pond weed	Potamogeton species
ragweed	Ambrosia psilostachya
saltbush	Atriplex triangularis
saltgrass	Distichlis spicata
Sanfords sgaittaria	Sagittaria sanfordii
smartweed	Polygonum hydropiper and P. punctatum
sweet fennel	Foeniculum vulgare
tule	Scirpus acutus
umbrella sedge	Cyperus eragrostis
yellow-star thistle	Centaurea solstitialis
verbena	Verbena hastata
water fern	Azolla filiculoides
watergrass	Echinochloa crusgali
water horehound	Lycopsis americanus
water milfoil	Myriophyllum species
willow	Salix sp.
willow herb	Epilobium adenocaulon
yellow water weed	Ludwigia peploides

D-4

C - 0 6 5 5 2 0

C-065520

Appendix E

Common and Scientific Names of
Wildlife Species Mentioned in the Text

E-1

C - 0 6 5 5 2 1

C-065521

10/10/11

E-2

C-065522

C-065522

Common and Scientific Names of Wildlife Species Mentioned in the Text.

<u>Common Name</u>	<u>Scientific Name</u>
<u>Amphibians</u>	
Tiger salamander	<u>Ambystoma tigrinum</u>
<u>Reptiles</u>	
Giant garter snake	<u>T.c. gigas</u>
<u>Birds</u>	
Pied-billed grebe	<u>Podilymbus podiceps</u>
American bittern	<u>Botaurus lentiginosus</u>
Great blue heron	<u>Ardea herodias</u>
Great egret	<u>Casmerodius albus</u>
Mallard	<u>Anas platyrhynchos</u>
Cinnamon teal	<u>Anas cyanoptera</u>
Gadwall	<u>Anas strepera</u>
American wigeon	<u>Anas americana</u>
Canvasback	<u>Aythya valisineria</u>
Red-necked duck	<u>Aythya collaris</u>
Turkey vulture	<u>Cathartes aura</u>
Black-shouldered kite	<u>Elanus caeruleus</u>
Northern harrier	<u>Circus cyaneus</u>
Swainson's hawk	<u>Buteo swainsoni</u>
Red-tailed hawk	<u>Buteo jamaicensis</u>
American kestrel	<u>Falco sparverius</u>
Ring-necked pheasant	<u>Phasianus chukar</u>
California quail	<u>Callipepla californica</u>
California black rail	<u>L. j. coturniculus</u>
Virginia rail	<u>Rallus limicola</u>
American coot	<u>Fulica americana</u>
Sandhill crane	<u>Grus canadensis</u>
Belted kingfisher	<u>Ceryle alcyon</u>
Black phoebe	<u>Sayornis nigricans</u>
Horned lark	<u>Eremophila alpestris</u>
Marsh wren	<u>Cistothorus palustris</u>
Water pipit	<u>Anthus spinoletta</u>
Loggerhead shrike	<u>Lanius ludovicianus</u>
Common yellowthroat	<u>Geothlypis trichas</u>
Savannah sparrow	<u>Passerculus sandwichensis</u>
Song sparrow	<u>Melospiza melodia</u>
Lincoln's sparrow	<u>Melospiza lincolni</u>
Golden-crowned sparrow	<u>Zonotrichia atricapilla</u>
White-crowned sparrow	<u>Zonotrichia leucophrys</u>
Dark-eyed junco	<u>Junco hyemalis</u>
Red-winged blackbird	<u>Agelaius phoeniceus</u>
Western meadowlark	<u>Sturnella neglecta</u>

Mammals

Black-tailed hare
California ground squirrel
Deer mouse
California vole
House mouse
Coyote

Lepus californicus
Spermophilus beecheyi
Peromyscus maniculatus
Microtus californicus
Mus musculus
Canis latrans

Appendix F

SAN JOAQUIN COUNTY
LOCAL AGENCY FORMATION COMMISSION

GUIDELINES FOR FORMATION AND
DEVELOPMENT OF LOCAL GOVERNMENTAL AGENCIES

F-2

C - 0 6 5 5 2 6

C-065526

SAN JOAQUIN COUNTY LOCAL AGENCY FORMATION COMMISSION

GUIDELINES FOR FORMATION AND DEVELOPMENT OF LOCAL GOVERNMENTAL AGENCIES

PURPOSE, OBJECTIVE AND PRINCIPLES

The purpose of the San Joaquin County Local Agency Formation Commission is to regulate changes in structure of local governmental agencies. The Commission approves or denies applications for such actions as annexations, withdrawals, incorporations, formations, consolidations or dissolutions applying to cities or special districts within San Joaquin County. The objective is a viable organization of local agencies that will provide the greatest long term public good. Three principles shall be considered predominant by the Commission in pursuing its goals.

1. Local agencies should be so constituted and organized as to best provide:

- A. for the social and economic needs of all county residents
- B. efficient governmental services for orderly land use development
- C. controls required to conserve environmental resources.

The public interest shall be served by considering "resource" in a broad sense to include ecological factors such as open space, wildlife and agricultural productivity in addition to the commonly accepted elements of land, water and air.

2. Local agencies should be so constituted and organized as to provide the aforementioned governmental services and controls in the most economical manner possible. Proliferation of local agencies shall be controlled in view of the following:

- A. unplanned urbanization and overlapping or duplicating agency structures add unnecessarily to the costs of providing governmental services
- B. dispersion of governmental responsibility throughout a multitude of local agencies fragments public awareness and thereby restricts democratic process
- C. special districts add to various departmental workloads of County and State governments and therefore create expense by the mere fact of their existence.

It is Commission guideline policy to encourage reducing the number of special districts through merger, consolidation or dissolution whenever necessary services or controls are not thereby curtailed.

3. The Commission will be guided in its determinations by these adopted guidelines and by enabling California State legislation (principally current amended versions of the Knox-Nisbet Act and the District Reorganization Act of 1965). The Commission will also be guided by duly constituted governmental bodies charged with responsibility for land use planning, resource conservation and related functions.

In order to plan for development and adjustments of local governmental agencies to meet foreseeable requirements, the Commission will also adopt and be guided by Sphere of Influence studies pursuant to Section 54774 of the California State Government Code. Such studies and General Plans prepared by existing local agencies will serve the Commission as criteria for evaluating proposals within its jurisdiction.

GUIDELINE STANDARDS

It is the responsibility of the Commission to encourage planned development of local governmental agencies consistent with aforementioned principles. Accordingly, the Commission will apply the following Guideline Standards pertaining to proposals within its jurisdiction.

Section 1. Proposal Evaluation Standards

- A. No proposal shall go to hearing by the Commission until the boundary description has been reviewed and approved by the County Surveyor. If the Commission approves a proposal subject to a condition imposing boundary alterations, it shall be the responsibility of the proponent(s) to submit three (3) copies of correctly amended boundary descriptions and maps to the Executive Officer within thirty (30) days of the date of approval.
- B. The creation of boundaries that split lines of assessment shall be avoided. This standard may be waived by the Commission when separating a parcel from a large tract is necessary for orderly development.
- C. The Executive Officer's report on all annexations or formations shall ascertain if the adoption of the proposal would result in two or more districts or a city and a district possessing, in any common territory, the authority to perform the same or similar functions. Proposals which would result in duplication of authority to perform similar functions will be opposed.
- D. Proposals for annexations to cities shall include all of the adjacent rights-of-way necessary for unrestricted access to the affected property. It is the intent of the Commission that all public roads except expressways and freeways shall be included in any proposals for annexations to cities.
- E. Annexation to an adjacent city will be favored over a proposal for providing urban services by special districts.
- F. Annexations to agencies providing urban services shall be progressive steps toward filling in the territory designated by the affected agency's adopted Sphere of Influence. Proposed growth shall be from inner toward outer areas.
- G. Boundaries which create islands, strips or corridors within an agency providing urban services shall be avoided.
- H. Annexation to or formation of a multiple service agency will be favored over a proposal for providing urban services by a multiplicity of limited service districts.
- I. Annexation to an existing agency will be favored over a proposal for forming a new agency to provide the same services.
- J. A proposal that does not establish an economically sound basis for financing required services will not be approved.
- K. Economical efficiency of a larger annexation will be favored over a proposal for "single parcel" or "piecemeal" annexation.

- L. A proposal establishing urban encroachment of areas designated by the County General Plan for open space or agricultural use will be opposed unless it complies with a previously adopted Sphere of Influence of an incorporated City.
- M. It will be the responsibility of the proponent(s) of any proposal not complying with these guidelines to show that approval of such proposal will not be detrimental to the public interest.

Section 2. Special District Standards

- A. In adopting, reviewing and updating Sphere of Influence studies (pursuant to Section 54774 of the California Government Code) the Commission shall periodically identify current opportunities to reduce the number of special districts in San Joaquin County.

Principal opportunities so identified will be:

- (1) overlapping districts which can be merged into a single multi-purpose district providing the same services and controls
 - (2) multiplicity of small districts which can be consolidated into a single district providing the same services and controls for a larger area
 - (3) inactive districts which can be dissolved.
- B. The Commission will direct its staff to apply provisions of enabling state legislation to effect all possible improvements in bringing special districts into compliance with Commission guidelines.

IMPLEMENTATION POLICY:

The following policy statements are hereby adopted by the Commission to foster understanding of these Spheres of Influence and to effectuate the goals and objectives of the Sphere of Influence plan:

1. Annexation to a district having a "zero" Sphere of Influence shall not be approved by LAFCo unless the proposed development has otherwise been authorized and city annexation is not feasible.
2. Formation of a new district within the City Sphere of Influence shall be opposed by LAFCo unless the proposed development has otherwise been authorized and no feasible alternative for service exists.
3. The City is encouraged to develop long range plans to provide City services throughout its Sphere of Influence and to take an active interest in solution of all governmental service problems within that boundary.
4. The City and districts are encouraged to amend their boundaries or enter into inter-agency contracts to rationalize their service areas and improve efficiency and economy for those served.
5. Territory shall be detached from a special district upon annexation to the City, if the City commonly provides the same or similar service. Inter-agency contracts may be considered to reduce the impact on the district or the City.
6. Annexation of prime agricultural lands shall be discouraged by LAFCo unless the City demonstrates that the proposal is consistent with State Policy as provided by Section 54790.2 of the Government Code, attached.
7. Annexation of Williamson Act contracted agricultural lands shall be discouraged by LAFCo unless said contract has been amortized to within one year of expiration or unless "city protest" will render the contract void upon City annexation; further, provided that policy 6 has been met.
8. The City is encouraged to prezone territory before submitting an application to LAFCo when the proposed annexation would result in substantial development. Prezoning is not necessary when annexing developed territory or when only minor development would result.
9. The City Sphere of Influence is only one factor to be considered by LAFCo when reviewing specific applications for boundary change. Other factors include evaluation of proposed development with regard to the need for City services, the City's ability to serve, the effect on adjacent local service agencies, the logical time-phasing for expansion of City facilities, the effect on planned open space and agricultural land, and other factors found pertinent.

Appendix G

BIKEWAY CRITERIA AND DESIGN STANDARDS

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CHAPTER V BIKEWAY

CRITERIA AND DESIGN STANDARDS

Criteria

A primary bike route system doesn't imply that bicyclists will be restricted to those streets. Bicyclists, like motorists, seek the most direct routes to their destinations. Bicycling now, and in the future, will take place on nearly all public roads. For these reasons the existing streets and roads serve as the major elements to provide for the travel needs of the cyclist.

Probably the most important effort that could be undertaken by local and regional agencies to enhance bicycle travel would be to improve maintenance and to upgrade the existing roads that are used by bicyclists. This requires that increased attention be given to the right-hand portion of the roadway. An attempt should be made to improve the width and quality of the road surface and to maintain the right-hand portion in a condition suitable for bicycle riding. Roadway improvements include providing shoulders of adequate width for bicycles and resurfacing the full shoulder width. When restriping a roadway for more traffic lanes, the impact on bicycle travel should be considered. These efforts improve the road for bicycle travel and also benefit the motorist.

Types of Facilities The State of California's Planning and Design Criteria for Bikeways in California identifies four types of bicycle facilities.

Shared Roadway (No bikeway designation) - On streets and highways that are fully adequate for safe and efficient bicycle travel, signing, striping, or bikeway designation may be unnecessary.

On rural highways that are used by touring cyclists for intercity and recreational travel, designating these highways as bikeways may be inappropriate because of their limited use. However, on those roadways that are identified as providing bicyclists with a link to traffic generators, the goal of developing and maintaining a four foot paved roadway shoulder with an edge stripe can improve the safety and convenience of that roadway for motorists and bicyclists alike.

Class I Bikeway (bike path) - Generally, bike paths should be used to serve corridors not served by streets and highways. Bike paths should offer opportunities not provided by the road system. They most often provide a recreational opportunity. The most common applications are along rivers, canals, utility rights-of-way, abandoned rights-of-way, within college campuses, or within and between parks. There may also be situations where such facilities can be provided as part of planned developments. Another application of Class I facilities is to close gaps to bicycle travel

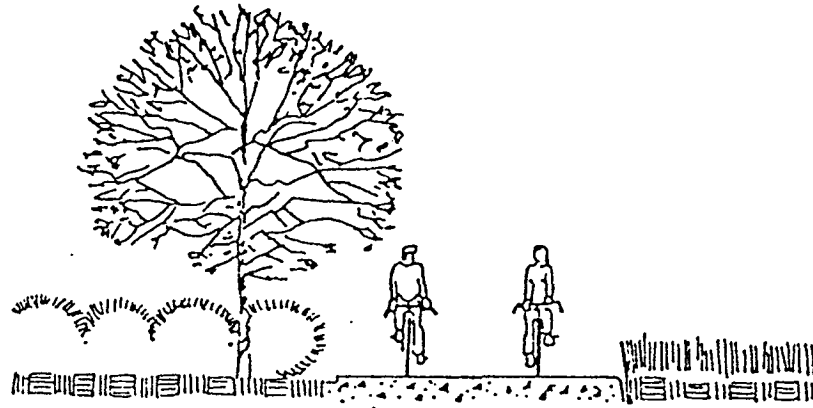
caused by construction of freeways, or because of the existence of natural barriers (rivers, mountains, etc.).

Class II Bikeway (bike lane) - Bike lanes are along streets where there is significant bicycle demand. Bike lanes are intended to delineate the rights-of-way assigned to bicyclists and motorists and to provide for more predictable movements by each. But a more important reason for constructing bike lanes is to better accommodate bicyclists through corridors where insufficient room exists for safe bicycling on existing streets. This can be accomplished by reducing the width of traffic lanes, or prohibiting parking on given streets. In addition, other things can be done on bike lanes to improve the situation for bicyclists (improvements to the surface; augmented sweeping programs, special signal facilities, etc.).

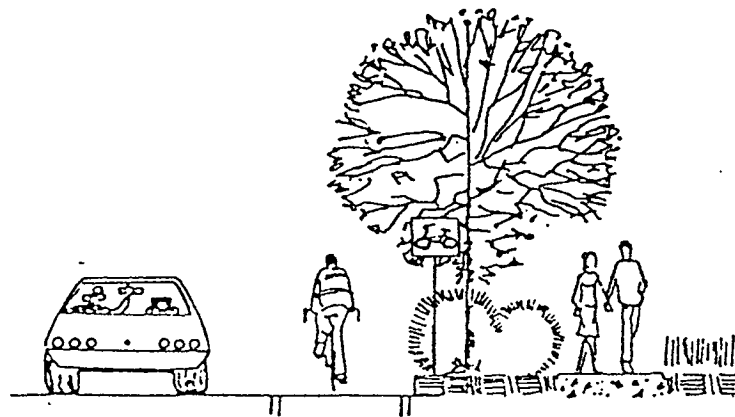
Class III Bikeway (bike route) - Bike routes are shared facilities which serve either to: (1) provide continuity to other bicycle facilities (usually Class II bikeways); or (2) to designate preferred routes through high-demand corridors. As with bike lanes, designation of bike routes should indicate to bicyclists that there are particular advantages to using these routes as compared with alternative routes.

It should be emphasized that in the designation of bikeways as Class I, II or III facilities, one class is not "better" than another. Each class has its appropriate use. (For a graphic representation of Class I, II and III, see Figure 1.) In selecting the proper route, an overriding concern is to assure that the proposed facility will not encourage or require bicyclists or motorists to operate in a manner that is inconsistent with the rules of the road.

FIGURE 1
BIKEWAY CLASSIFICATION



Class I Bike Path



Class II Bike Lane



Class III Bike Route

Bikeway Standards

The bikeway illustrations and minimum width requirements (figures 2 and 3) are from the published State of California standards (Planning and Design Criteria for Bikeways in California, Caltrans 1978). For a detailed description of these standards, the reader is urged to consult the above document directly.

Appendix H

CULTURAL RESOURCES INVESTIGATION

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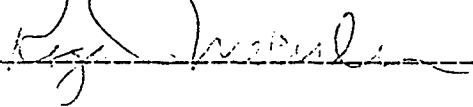
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CULTURAL RESOURCES INVESTIGATION
BROOKSIDE COMMUNITY DEVELOPMENT PROJECT, STOCKTON, CALIFORNIA

Roger H. Werner
Principal Investigator
Archaeological Services, Inc.



Introduction

The following reports the results of a cultural resources investigation of the Brookside Community Development Project. The project area consisted of approximately 1600 acres located adjacent to the Calaveras River at its confluence with the San Joaquin River in central west Stockton. The field investigation was undertaken by the author on 7, 8, and 9, April 1988 at the request of Jones and Stokes Associates, Inc. pursuant to the stipulations of the California Environmental Quality Act (CEQA), as interpreted by the Planning Department of the City of Stockton.

The purposes of the survey were to (1) locate, identify, and record archaeological and historical sites present within the project area, (2) assess the significance and uniqueness of each identified site using the guidelines set forth in Appendix K of CEQA, and (3) make recommendations for the mitigation of adverse impacts to identified, significant cultural resources.

Although results of the survey were negative with regard to discovery of surface cultural resources, the project area is highly sensitive to the presence of buried archaeological sites. Recommendations for treating buried archaeological sites, if discovered, are included herein.

Project Location

The project area, located north of the Calaveras River and east of the San Joaquin River, is unevenly bisected by Brookside Avenue. Fourteen Mile and Ten Mile sloughs border the project area on the north and west respectively. The Mokelumne Aqueduct transects the southern half of the project area from southwest to northeast. More specifically, the project area is located within Sargent-Barnhart Tract, an unsurveyed portion of T2N, R5E and 6E, as depicted on the Stockton West 7.5 minute topographic

quadrangle (USGS 1968, pr. 1976; see Map 1). The project area was well defined by roads, levees, or fence lines.

Effective Environment

The project area consisted of a roughly rectangular, level, agricultural field. At the time of the field investigation, approximately 25% of the survey area was under cultivation. Approximately a third of the area south of Brookside Ave was covered with a low, leafy vegetable; all of the remainder had been recently plowed but was lying fallow; small section at the western terminus of the Mokelumne Aqueduct was planted mixed vegetables. Formerly, much of the western half of this area was planted in asparagus.

A small segment of the project area north of Brookside Ave represents a private residence and horse ranch. Approximately a third of the north area was planted in annual grasses used for hay (including alfalfa). A small pond exists in the approximate center of the north half of the project area.

Except along the levees, the project area virtually lacked trees. A few exotic species were noted within the horse ranch located in the central western portion of the project, just north of Brookside Avenue. Additional trees were noted around the residences located along the south central boundary.

One hundred percent of the surface of the project area has been disturbed by agricultural activities (including plowing, disking, irrigation line trenching activities, construction of a farm house and related out buildings, minor leveling for gravel and dirt roads). The nature and extent of these disturbance are difficult to gage. It is assumed that agricultural activities have been confined to the upper three feet of soil. In some areas, excavation for irrigation lines may have exceeded 3 feet but this could not be confirmed by field observation.

Excavation for the Mokelumne Aqueduct appears to have been extensive, at least within the East Bay Municipal Water District Right-of-Way. The first pipeline was buried in the 1920s, followed by a larger pipe in the early 1960s. Emplacement of this line appears to have required major excavation.

Cultural Background

History

The first recorded explorations of Alta California were undertaken by the Spanish in 1542. These expeditions were confined to coastal areas. The earliest recorded exploration of

the San Joaquin Valley was completed by Pedro Fages in 1772 (Bancroft 1884[IV]) but he never explored the lower portions of the valley or the delta region.

After the founding of Mission San Juan Bautista in 1797, the lower San Joaquin Valley was periodically visited by Spanish military explorations, searching for Indians who had run away from the mission. However, no concentrated effort was made to gather new converts or subjugate valley tribes (Bancroft 1884[IV]).

Between 1806 and 1808, Gabriel Moraga explored the lower San Joaquin River and delta area (Bancroft 1884[IV]). In 1813, Soto conducted punitive raids in the north delta region (Bennyhoff 1977); Duran and Arguello explored the area in 1817 (Cook 1960).

Spanish colonial occupation of Alta California was followed by a Mexican takeover in 1821 (Thompson 1957). The Mexicans did not attempt to explore the region further. In 1833 California missions were secularized, and between 1833 and 1845 certain valley Indian groups conducted raids against coastal Mexican settlements (Thompson 1957). In order to mitigate the effects of Indian raids, the Mexican government began a policy of making land grants in the hinterland regions of their territory (Thompson 1957). It was thought that these so called ranchos would act as frontier buffers.

The earliest anglo-explorations of the central valley were undertaken by fur trappers. Four major American explorations into the region occurred between 1826 and 1833. These explorations identified the region as rich in fur bearing animals (Bancroft 1884[IV]). During this same period, the region was frequented by members of the Hudson's Bay Company; French Canadian and English trappers frequently made their summer encampments at French Camp.

These explorations had a catastrophic effect on native populations susceptible to European diseases. Small pox, measles, and malaria devastated Indian populations the entire length of the valley (Cook 1955). By 1840, the Indian population of the central valley had been reduced by as much as 75%.

Americans were responsible for the earliest settlement of the lower San Joaquin Valley. In the early 1840s, Charles Weber hired a family from San Jose to settle in French Camp. This attempt at settlement failed. However, a few years later, Weber was more successful in his attempt to settle the Stockton area. By the late 1840s, Stockton was established. Weber foresaw the town as an important inland port (Thompson 1957).

The discovery of gold in the Sierra Nevada foothills postponed settlement of the central valley; large landowners had

difficulty in attracting men and their families into the region with the lure of gold nearby. After a few years in the gold camps, many miners realized that they could make a better living selling goods and services to the miners; thus began the first major population growth of the central valley. This growth was relatively slow until the vast network of marshes and sloughs were drained and levees constructed. This effort was begun in the 1870s but was not completed until the early years of the twentieth century (Thompson 1957).

Ethnography

Prior to the coming of Euroamericans, the lower San Joaquin Valley was occupied by speakers of the Northern Valley Yokuts language (Wallace 1978). The Northern Yokuts were part of a much larger, culturally diverse language group that occupied almost the entire San Joaquin Valley and adjoining foothills. Unfortunately, the Northern Yokuts were largely extinct by the time anthropologists undertook systematic study of California Indian culture (Wallace 1978). Few specific data are available for the group.

It is known that the group lived along the San Joaquin River and that Stockton was a major focal point of their occupation. Their subsistence was oriented to hunting and gathering with major emphasis placed on the collection and processing of acorns (Latta 1949; Wallace 1978). Hunting water fowl and fishing for salmon were probably important activities as well.

Wallace (1978) suggested that evidence supported a concentration of Northern Yokuts settlements immediately adjacent to the San Joaquin River and its major tributaries. These settlements were year round villages; however, some seasonal travel by small groups was probably undertaken. Specific locations for Northern Valley Yokuts villages are unknown.

Prehistory

The prehistory of the lower San Joaquin Valley has long been the subject of archaeological interest. Early efforts, undertaken by amateurs with university affiliation, were summarized by Schenck and Dawson (1929). In the 1920s and 1930s, Sacramento Junior College began the study of selected Indian mounds along the Cosumnes and nearby rivers. This research culminated in a monograph by Lillard, Heizer, and Fenenga (1939) that established a three-phased cultural sequence. In 1948 this sequence was refined and expanded into the San Francisco Bay region by Beardsley (1954).

Beardsley's chronological sequence consisted of Early, Middle, and Late Horizons, each characterized by distinctive artifact styles, burial pattern, inferred economic pattern, and

site distribution. The sequence documents human occupation back to approximately 5500 B.P. (years before present). Since 1954, archaeological research has established that Beardsley's sequence is applicable for the Delta region only.

Between the late 1960s and 1980, archaeological field work in the region was limited to a salvage excavation within the Interstate 5 right-of-way at Mossdale, a salvage excavation in the French Camp area, and salvage and a later burial recovery along Bear Creek in north Stockton. While data from these excavations have not yet been analyzed and reported, preliminary interpretations support the established cultural chronology.

Project Methods

The archaeological study of the Brookside Community Development Project was completed in three steps: prefield research, field survey, and report preparation.

Prefield Research

Initially, the archaeological files of the Central California Information Center, California State University, Turlock, were reviewed in order to determine (1) if previously recorded sites were situated within the project area and (2) if the project area had been subjected to previous archaeological investigation.

Next, the files of the San Joaquin Valley County Historical Museum and the Holt-Atherton Pacific Center for Western Studies were inspected in order to (1) determine the extent of historic-period modifications to the San Joaquin and Calaveras rivers, and Fourteen Mile and Ten Mile sloughs, (2) identify any former water courses within the project area that may have been drained and filled, and (3) document historic-period land uses of the project area. This inspection was accomplished primarily through a thorough examination of late nineteenth and early twentieth century maps.

Finally, relevant archaeological studies from the Stockton area were reviewed in order to (1) locate known archaeological sites not reported to the Information Center, (2) identify the types of archaeological sites likely to occur within the project area, and (3) ascertain whether known but unrecorded sites are surface or subsurface manifestations.

Field Survey

The second step in the study involved an on-foot systematic survey of the project area by the author. Survey strategy included limited use of intensive coverage (employing 30 meter

wide transects), general coverage (50-100 meter wide transects), a careful examination of the river banks for buried archaeological sites, and an examination of all irrigation and drainage ditches for buried archaeological sites.

Those portions of the project area (approximately 25% of the project area) under cultivation were not inspected.

Report Preparation

The final step in the investigation was preparation of a preliminary report in August 1987, then a final report in April 1988.

Results of the Study

Prefield Research

Information Center records indicated a lack of recorded archaeological sites within the project area. Nor was the area subject to prior archaeological study. The nearest recorded archaeological sites are located approximately 1.5 miles to the east on the Calaveras River east of Stockton, 2 miles to the north on Mosher Slough, and 2.5 miles to the southeast on French Camp Slough.

Maps on file at the Holt-Atherton Library and the San Joaquin County Historical Museum indicated that some modifications to Ten and Fourteen Mile sloughs had occurred. Inspected maps included Atwood Printing Company (1930), Bureau of Reclamation (1929); Freese (1935); Landrum (n.d). Metskers Company (1930); Plecarpo (1952,1955); Thomas Brothers (1935).

It appears that over the years, both Ten Mile and Fourteen Mile sloughs have drained and filed or channelized. In particular, Ten Mile Slough appears to have decreased in size, probably by filling. Today, the slough can hardly be called a drainage; rather, it is a marshy ditch. In the past, this slough connected to both Fourteen Mile Slough and the San Joaquin River, albeit at different times. Today, Ten Mile Slough does not connect to either the San Joaquin River or Fourteen Mile Slough. None of the maps indicated the former presence of drainages within Sargent-Barnhart Tract.

County maps depicting land ownership on file at the museum (various authors and years) suggest that project area has been under cultivation since the turn of the century. With the exception of a farm house on the southern boundary of the parcel, opposite Shenkel Island, these maps depict open fields with no structures present.

The earliest technical archaeological information relevant to the Stockton area in general, and the north Stockton area in particular, was compiled and published in 1929 by Schenck and Dawson. The purpose of this study was to consider the archaeological potential of the northern San Joaquin Valley. Schenck and Dawson predicted that while archaeological might exist they would be difficult to locate:

so far as physical evidence is concerned, man could thus have lived here from his most remote antiquity. But any record which he might have left would have been buried by the recent alluvium and would be difficult to access except in extraordinary circumstances or by chance (1929:294). [emphasis added]

Schenck and Dawson stated that for purposes of their study, the region was bounded on the south by French Camp Slough and on the north by Bear Creek. The major creeks entirely within the region were the Calaveras River and its major tributary Mormon Slough. The Calaveras River is a perennial creek that rises in the low foothills of Calaveras County. The river is characterized by a narrow, primary stream channel. Schenck and Dawson suggested that "at times Mormon slough was the more important branch of the river" (1929:299). Both the main river and its southern branch, Mormon Slough, were evidently suitable for permanent occupation (Schenck and Dawson 1929:299).

While Schenck and Dawson do not report archaeological sites with Sargent-Barnhart Tract, they note several archaeological sites nearby. For example, two archaeological sites are reported at the intersection of Lower Sacramento Road and Pacific Ave [northeast quarter of the southeast quarter, Section 16, T2N,R6E]. This location is approximately 2 miles northeast the project area (1929:315[Table 1,nos.78,79]). It is likely that these two sites were located adjacent to Fivemile Creek.

Another archaeological site (designated no. 80 [also known as Barr's Stockton Channel Mound] by Schenck and Dawson) is reported between Edison and Harrison Streets on the north bank of the Stockton channel (Schenck and Dawson 1929:313[Table 1,no.32]). This site is describes as a principal aboriginal settlement in the Stockton area (Schenck and Dawson 1929:307). They further suggested that the site may represent a Passasimas (Northern) Yokut village visited by the Spanish in 1817. Barr apparently met a fifty year old Indian in Amador County in 1897 who claimed to have been born on site 80. Schenck and Dawson (1929:310) reported that site 80 was a burial and living site.

Site no. 84 was reported on the "College" of the Pacific campus, on the south bank of the Calaveras River (Schenck and

Dawson 1929:315); the site, a burial and occupation area (1929:310), was located a mile east of the project area.

Two archaeological sites were report by Schenck and Dawson (1929: 315) on the San Joaquin River south of the Calaveras River and several others were reported on French Camp and Walker sloughs (sites no. 81, 82, 91, and 92. The first two sites were recorded as burial and living areas (1929:310); the latter sites was unreported.

The current physical condition of the above sites is entirely unknown. Schenck and Dawson stated that as of the 1920s, sites 78, 79, 84, 91, and 92 were destroyed; but they do not define what they mean by this (1929:322). If the sites were mounds, no doubt they were leveled; but without conducting excavation it would be impossible to determine if the subsurface components of surface sites existed. Site 80, an elliptical deposit some 300 feet long oriented parallel to the stream bank, was reported covered (Schenck and Dawson 1929:322). Site 82 was also reported covered. The deposit was approximately 100 by 75 feet and 7 feet high. Elliptical in shape, the deposit parallel the stream bank. The nature of sites 81, 91, and 92 were not discussed by Schenck and Dawson (1929).

Only one of the seven sites discussed above is located on the Calaveras River. Several other sites were reported on the San Joaquin River south of the project area.

Since the time of Schenck and Dawson, several archaeological sites have been formally recorded with the Information Center in Stockton including CA-SJO-105, -106, -112, and -152 (see Olsen and Wilson 1964:2). CA-SJO-112, excavated by Olsen and Wilson (1964) in the late 1950s, is situated approximately 2 miles to the north of the project area on either side of Mosher Slough. CA-SJO-112 appears to represents either a terminal Early Horizon village (Meighan 1987:35) or perhaps a dedicated Early Horizon cemetery.

CA-SJO-152 is located on Mosher Slough approximately 2 miles northeast of the Stockton city limits. Olsen and Wilson (1964:2) reported that the site dates from the Early Horizon. CA-SJO-106 is located east of the project area on Fourteen Mile Slough (Olsen and Wilson 1964:2). This site was later subdivided into two sites: CA-SJO-105 consists of a surface occupation deposit dating to the Late Horizon [Phases I and II] which, in the 1960s, capped the knoll of a low hill; an older deposit, designated CA-SJO-106, was situated in the lowlands slightly away from the stream.

Olsen and Wilson (1964:2) pointed out that these four sites shared several features: all were located in areas now subject to periodic flooding and lacked well-defined midden deposits.

H-10

They suggested that three sites (CA-SJO-106, -112, and -152) were (1) occupied at a time when the region was not subject to floods or (2) utilized primarily as burial areas by people living elsewhere. These three sites also represent buried archaeological deposits.

The presence of buried sites in the Sacramento-San Joaquin Delta region and along the tributaries of the two major rivers is well documented. In addition to the three sites mentioned above, the following buried archaeological deposits have been found in the Stockton-Lodi area: CA-SJO-56 -68, and -148, are located in Lodi where the Cosumnes and Mokelumne rivers join (these sites were excavated in the 1930s and 40s by Sacramento Junior College and the University of California Berkeley. CA-SJO-68 has been exhaustively described, most recently by Meighan [1987]); CA-SJO-91 (data partly presented in Seldomridge [1976], CA-SJO-165 (data presented in Rolan [1981]), the French Camp Slough Site (excavated in 1970 by Sacramento State College), and the Mossdale Site (excavated by Sacramento State College in 1972). Other buried archaeological sites in the delta region include CA-SAC-329 (located near Walnut Grove and excavated by Soule [1976]), CA-YOL-44, -45, -49, and the Kirtlan Site (near Clarksburg), and CA-SAC-107 on the Cosumnes River.

Obviously, a number of methodological problems must be overcome in order to locate archaeological sites in the delta region. The basic problem was first recognized by Schenck and Dawson (1929:299 and repeated by Beardsley (1954:64). Many of the larger archaeological sites in the area, especially those dating to the Early and Middle Horizons, have been buried by natural alluvial deposits. Other, smaller, sites have probably been obliterated by the same depositional process that obscured larger sites.

Beardsley (1954) noted that the more recent archaeological sites, dating to the Late Horizon, were sometimes reported on natural hills 1 to 10 feet in elevation overlooking water courses (1954:64). These archaeological deposits, usually characterized by black midden soil, in effect, accentuated the natural topography, thus facilitating discovery. Black midden soil, however, was not always present (as in the case of CA-SJO-105, reported by Olsen and Wilson [1964]).

It is emphasized that not all late period sites appear on the surface. Beginning in the 1870s, as a result of hydraulic gold mining activities, the sedimentation levels of central valley streams increased dramatically. Historic records indicate that in some places the total amount of deposition laid down in the 1870s exceeded total pre-1870s natural deposition. Rapid sedimentation resulted in the 1884 Sawyer Decree, which drastically curtailed unrestrained hydraulic mining. However, during the 10 years this mining technology was used in California

many late period archaeological sites were covered by a shallow deposit of recent alluvium.

Other factors influencing archaeological survey strategy include historic-period farming activities. Virtually all of the natural mounds in the valley have been leveled and many natural channels have been drained and filled. Existing modern topography is therefore not always a reliable mechanism with which to determine archaeological sensitivity.

These factors can hinder the archaeological investigation, as is suggested by the relatively few archaeological sites recorded in the Stockton area in particular and the delta region as a whole. The lack of very early sites is particularly noteworthy; perhaps three or four archaeological sites dating to the Early Horizon have been identified with none reported for earlier periods of human occupation.

The lack of recorded sites should not be interpreted as a lack of archaeological sensitivity. There can be little doubt that large numbers of archaeological sites exist in the area (Schenck and Dawson [1929] reported seven sites that have never been formally recorded). No doubt many of these sites simply can not be located and identified by standard surface methods. Extraordinary effort is required to identify buried archaeological sites.

Field Study

The field study herein was guided by the methodological considerations discussed in Werner (1988). Werner suggested that archaeological survey of Stockton area developments make a serious attempt to discover buried archaeological sites because except in the most fortuitous circumstances, archaeological site are likely to be buried or obscured by natural or human-induced soil deposition.

Werner further suggested that survey strategy selected strategies should not dramatically increase study costs over that of traditional surface survey.

As proposed, the Brookside Development project will create substantial subsurface impacts, primarily through the creation of a large lake for the area north of Brookside Avenue. This lake will replace the small pond currently in existence. Several smaller ponds are also proposed for the area south of Brookside Avenue. Presumably these features will be excavated well below three feet and could seriously effect deeply buried archaeological deposits. The project will create extensive surface impacts as well. These impacts will be quantitatively and qualitatively greater than agricultural related surface impacts and include grading, trenching, and related activities.

Archaeological sites located on, or just below, the surface could be completely destroyed.

The survey strategy developed therefore was aimed at identifying both deeply buried sites as well as surface sites. Initially, the project area was subjected to a walk-over survey by the author and one assistant. The entire project area was covered with parallel 75 to 100 meter wide transects. Next, all irrigation ditches and drainage ditches were carefully inspected. The project area south of Brookside road was criss-crossed by many such ditches; generally they were never more than 3 feet deep but many were not more than 1.5 feet deep. Some of the larger ditches were covered with a dense growth of Ribes spp., which made inspection of the soil profile difficult to impossible.

The levees surrounding the project area were then walked in order to locate potential river bank inspection areas. Unfortunately, the rivers were too high to allow inspection of the original bank.

The final stage of the field survey involved talking with long time residents of the area and with local farmers in order to identify archaeological sites that may have been uncovered by past agricultural activities. We spoke with Steve DaValle, manager for Grupe Operating Company. Mr. DaValle has been in charge of operating the Brookside farm for Grupe Company for three years. He stated that to the best of his knowledge, no archaeological materials, such as mortars and arrowheads, or human remains had been found within the property under his control. He further stated that the land to the south of Brookside Avenue was formerly planted in asparagus that required substantial soil preparation to depths of up to several feet.

We also spoke with Willie Wilson and his wife. The Wilson occupy a mobile home within the East Bay Municipal Water District right-of-way. They have lived on the property for over ten years and Mr. Wilson was with the district during the excavation of the large Mokelumne Aqueduct. The Wilson's stated that to the best of their knowledge, no archaeological materials have been found within the District right-of-way within the project area, or within the project area in general.

Conclusions and Recommendations

No archaeological sites were identified within the project area during prefield research or the field survey. One circa 1920s or slightly earlier farm house was noted. No site-specific mitigation recommendations need be offered for archaeological sites. Regarding the farmhouse, historic research suggests that this structure was one of the first, if not the first, built

within Sargent-Barnhart tract and may have at one time belonged to the Sragent family. This structure probably lacks historic value but it may have some architectural value.

There is a very high probability that buried archaeological sites exist within the project area. This is based on the fact that (1) Indians generally made permanent encampments at the confluences of major water courses and (2) the confluence of the San Joaquin and Calaveras rivers is just south of the project area.

It seems likely that if archaeological sites do exist, they are probably buried below 2 feet of soil. We feel confident that surface archaeological materials, including artifacts located immediately below the ground, do not exist.

In dealing with the problem of buried archaeological sites several options should be considered:

One option would be to have an archaeologist monitor deep excavations (for example lake/pond excavations). If archaeological materials were found during monitoring, all excavation activities in the vicinity of the find would then be halted until the finds were evaluated. Appropriate mitigations could be proposed at that time. Selection of this option might result in construction delays if archaeological materials were uncovered.

A second option would be to identify the areas requiring deep excavation early in the planning process; then retain an archaeologist to explore those specific areas, probably with the aide of a back hoe. If the second option were selected, archaeological materials, if found, would be identified in advance of construction and delays could be completely avoided. This option would require the expenditure of additional funds prior to project construction.

A last option would be to do nothing. If this option were selected, we emphasize that if any archaeological materials are found, including bone, shell, obsidian, bottle glass, ceramics, or locally darkened soil, that a qualified archaeologist be retained to evaluate the finds and propose mitigations as appropriate. This last option is the least satisfactory of the three proposed because the process has the greatest potential for abuse as it relies on the willingness of the construction crew to report archaeological finds. If finds are not report, archaeological data could be lost and human burials might be disinterred.

With regard to the 1920s farmhouse, if the project propoent intends to remove the structure, we recommend that its architectural value be considered. This could be undertaken as a

mitigation; baring an unusual find, rendering the house architecturally significant, the evaluation would probably consist of some historical research and thorough recording of the structure before its removal.

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Appendix I

ANALYSIS OF A CALAVERAS RIVER
CROSSING WEST OF I-5

I-1

C - 0 6 5 5 5 5

C-065555

I-2

C-065556

C-065556

SUPPLEMENTAL TRAFFIC ANALYSIS

FOR THE

PROPOSED BROOKSIDE DEVELOPMENT

Prepared For:

Grupe Development Company

Prepared By:

OMNI-MEANS, Ltd.
Engineers & Planners
2240 Douglas Blvd., #260
Roseville, CA 95661

February 8, 1988

3156-07

I-3

C - 0 6 5 5 5 7

C-065557

Analysis of a Calaveras River Crossing West of I-5

The following section presents the results of a study conducted to address the circulatory benefits of a north-south bridge across the Calaveras River. The land development level used to analyze the river crossing was the "Cumulative with Brookside" condition. The "Cumulative" development condition is identical to that described previously, however, the Brookside (project) trip generation is based on an earlier set of land uses for the project site. Since the earlier land use plan was projected to generate a significantly larger amount of vehicular trips, it can be considered a "worst case" condition.

If the river crossing was analyzed with the most current Brookside land uses, the forecasted travel demand would be reduced by 10 to 15% and v/c ratios would be reduced by 0.05 to 0.10 at critical intersections. The March Lane/I-5 ramp terminals can be expected to have similar percent reductions in volumes. Due to the modified land use plan, the v/c ratios and LOS listed in the following tables under the "Cumulative with Brookside" condition may differ from the v/c ratios and LOS presented for this condition in the preceding sections.

INTRODUCTION

This study is intended to supplement the Brookside Traffic Study¹ and to address the ramifications of providing a roadway extension and bridge structure across the Calaveras River in order to allow additional access between Brookside Road and Interstate 5 and the downtown area. Included in the analysis is a determination of the potential reduction traffic impacts on future operating conditions at the I-5/March Lane ramp junctions and in the March Lane travel corridor. In addition, the potential traffic impacts along Plymouth Road and Ryde Avenue (south of the Calaveras River) to the Country Club/I-5 ramps have also been addressed. To provide a benchmark for comparison, existing traffic conditions have been evaluated through observation of current weekday peak hour travel demand and average daily traffic information provided by Caltrans and the City of Stockton. Existing service levels were calculated for fourteen (14) intersections for both the morning (AM) and evening (PM) peak hours of traffic demand. The operating conditions on roadway segments in the vicinity of the river crossing have also been analyzed based on daily traffic volumes.

¹ Brookside Traffic Study, 1987. Prepared by OMNI-MEANS, Ltd. for Grupe Development Company.

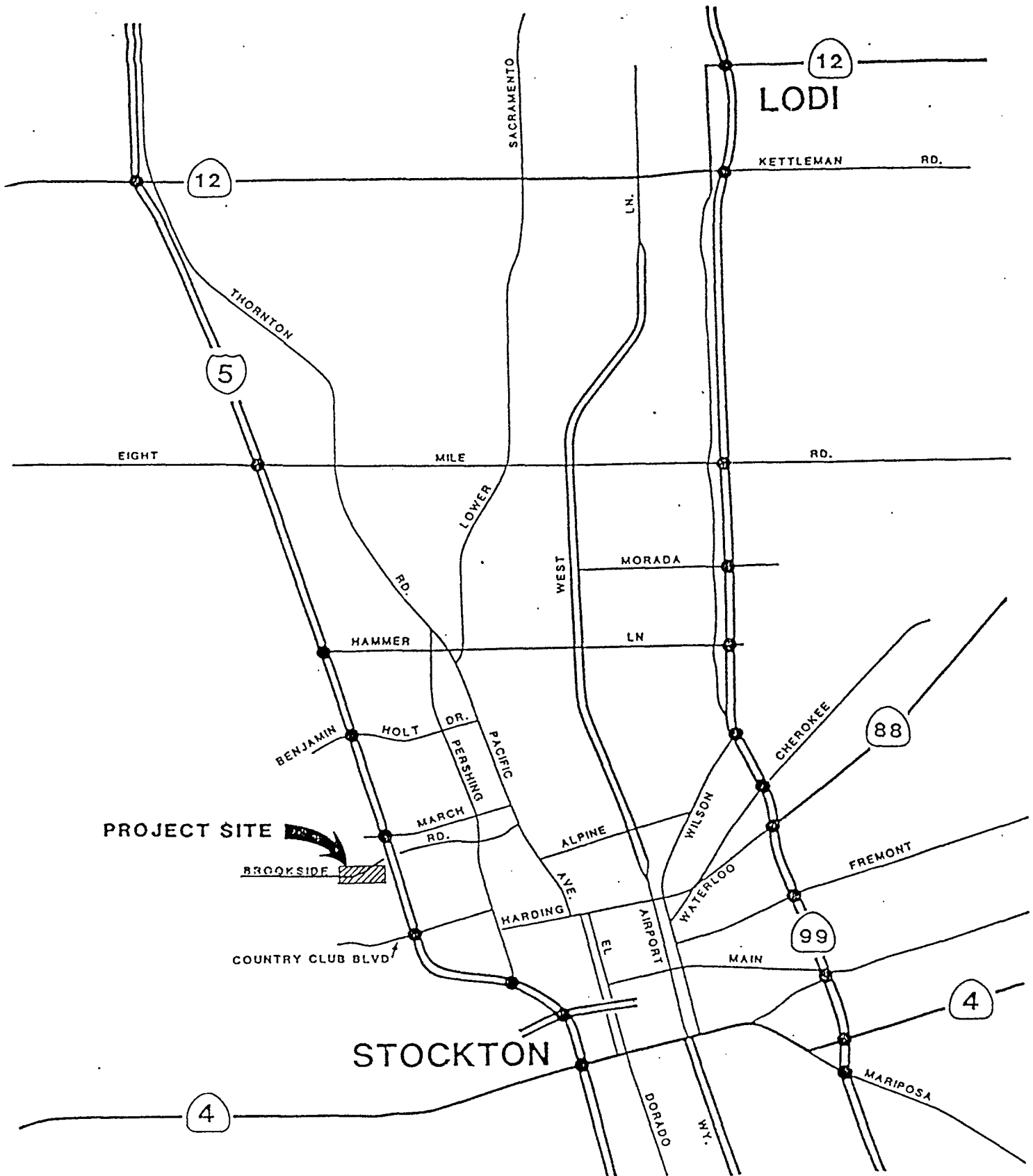
The proposed roadway extension and overcrossing was studied under the Cumulative with Brookside land development condition. To accurately project the anticipated traffic volumes on the proposed facility, travel demand models, which encompass the entire Stockton Metropolitan area, were utilized to distribute and assign existing and future traffic to the street system.

The analysis has shown that there would be a sixteen percent (16%) reduction in projected peak hour traffic volumes at the I-5/March Lane ramp junctions as a result of implementation of the proposed river crossing. Also, the average daily traffic (ADT) along March Lane between Feather River Drive and I-5 would decrease by approximately twenty-four percent (24%). The channelization improvements previously prescribed for the I-5/March Lane ramp terminals would be reduced at the northbound ramps, but remain the same for the southbound ramps. The trips diverted to the proposed Calaveras River crossing would increase the traffic demand on Ryde Avenue and Plymouth Road, however, the increases would not significantly impact these roadways.

Project Description

For the purpose of this analysis, the "Project" will refer to the western extension of River Drive and the Calaveras River crossing which includes the connection to Brookside Road on the north side of the river. The analysis assumes that the bridge structure will be comprised of two travel lanes and adequate additional width to allow for safe bicycle and pedestrian travel.

Presently, the western terminus of River Drive is located in the form of a stub (dead end) just west of Ryde Avenue. As a part of the project, River Drive would be extended from the existing stub along the top of the levee then curve north across the Calaveras River as a two-lane structure. On the north side of the River, the new facility would curve west and become aligned with the existing Brookside Road. The segment east of the "touchdown" location of the river crossing would be curved south to form a T-intersection. To achieve this new configuration a small segment of Brookside Road would need to be abandoned just north of the new T-intersection. Figure 1 depicts the regional setting and geographical location of the project site. Shown in Figure 2 is the alignment of the proposed Calaveras River crossing. The proposed alignment of the River Drive and Brookside Road intersection depicted in Figure 2 represents a preliminary configuration. To construct an intersection at the proposed location, which is essentially on top of the north bank of Calaveras River, may not be in accordance with the City's design criteria. Encroachment of the existing residential area would be required to locate the intersection further north (not on top of the levee). Any designs of this intersection should be in conformance with City standards and subject to review by City staff.



VICINITY MAP AND PROJECT SITE



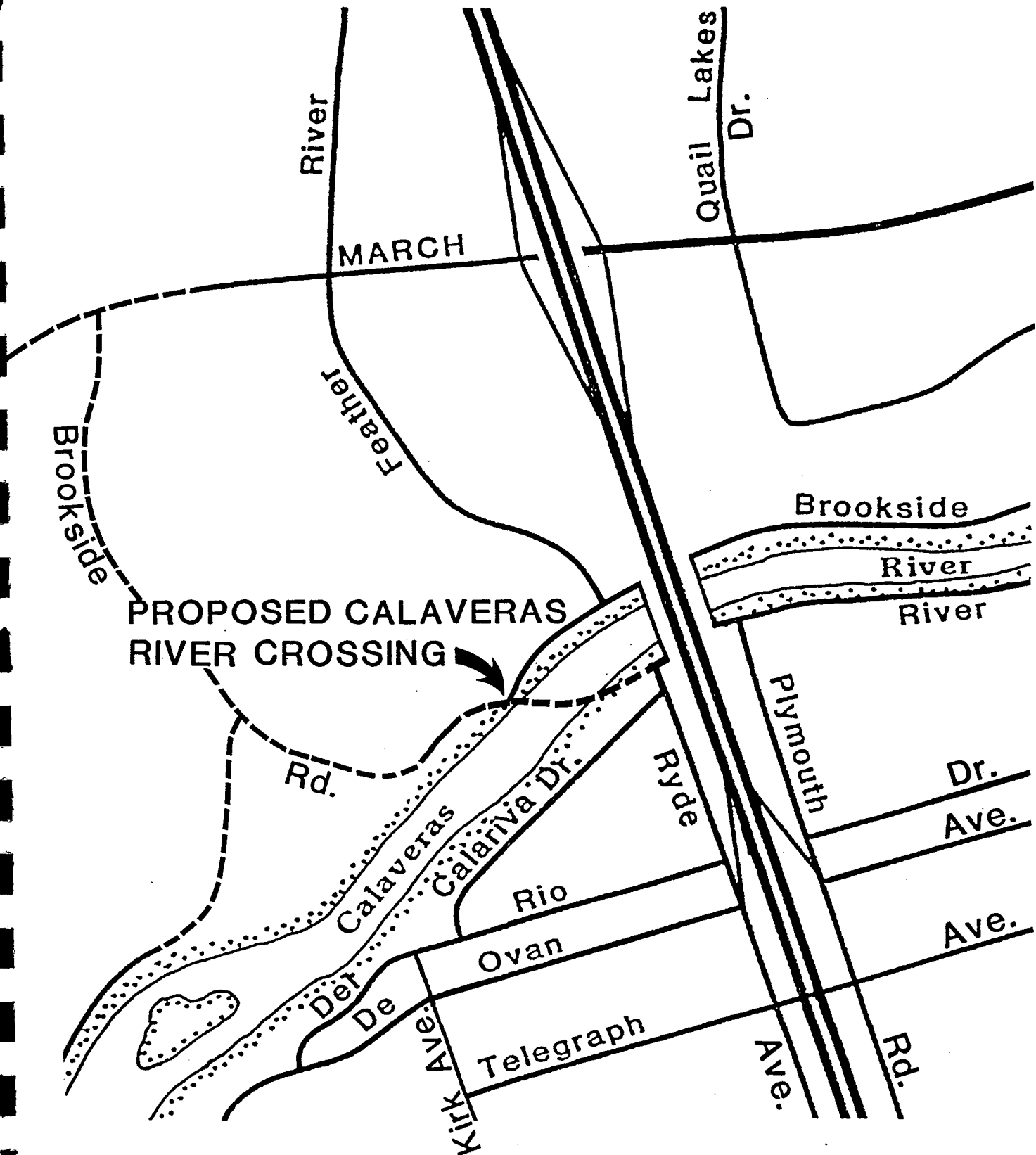
omni-means

figure 1

I-6

C-065560

C-065560



omni·means

ALIGNMENT OF PROPOSED
CALAVERAS RIVER CROSSING

I-7



figure 2

C - 0 6 5 5 6 1

C-065561

Another potential river crossing location would be a northern extension of Kirk Avenue, which is located west of the River Drive crossing location. With a Calaveras River Crossing at Kirk Avenue, traffic oriented toward I-5 would be required to traverse the residential areas west of I-5. The attractiveness of the Kirk Avenue crossing may be less than the River Drive crossing due to indirect access to and from I-5. Therefore, the Kirk Avenue crossing can be expected to carry less traffic than the River Drive location. Approximately 1,000 to 1,500 fewer daily trips can be expected on the Kirk Avenue crossing when compared to the River Drive crossing. Also, the Kirk Avenue crossing does not take advantage of the surplus capacity which exists on the Plymouth Road and Ryde Avenue couplet. An advantage of the Kirk Avenue overcrossing would be that fewer physical constraints exist on the north side of the River. The touch-down location on the north side could be incorporated into the proposed Brookside Circulation System.

EXISTING CONDITIONS

Existing Circulation System

Traffic demand in the I-5 corridor, south of the Calaveras River, is served by a couplet of one-way frontage roads (Ryde Avenue and Plymouth Road). Connections to the freeway are made via the Del Rio Drive and Country Club Boulevard ramp junctions. Ryde Avenue, which is parallel to and on the west side of I-5, is a three-lane one-way facility that runs southbound and distributes traffic among the east/west collector streets. The northbound complement of Ryde Avenue, located on the east side of I-5, is Plymouth Road which is also a three-lane one-way arterial that provides important access to the east/west streets between Del Rio Drive in the north and Country Club Boulevard in the south. The intersections along Ryde and Plymouth are presently controlled by traffic signals, two-way stops, and three-way stops. The segment of I-5 north of Country Club Boulevard is elevated above the surface streets, allowing four of the east/west streets to pass under. These undercrossings are located at Telegraph Avenue, Alpine Avenue, Michigan Avenue, and Country Club Boulevard.

In addition to the four undercrossings located between the I-5 ramps, there is a fifth undercrossing (River Drive) just south of the Calaveras River. River Drive begins in the east at Pershing Avenue and continues westerly before terminating as a stub just west of Ryde Avenue. The proposed roadway extension would begin at the stub of River Drive and continue across the river, connecting with Brookside Road on the northern side of the Calaveras River.

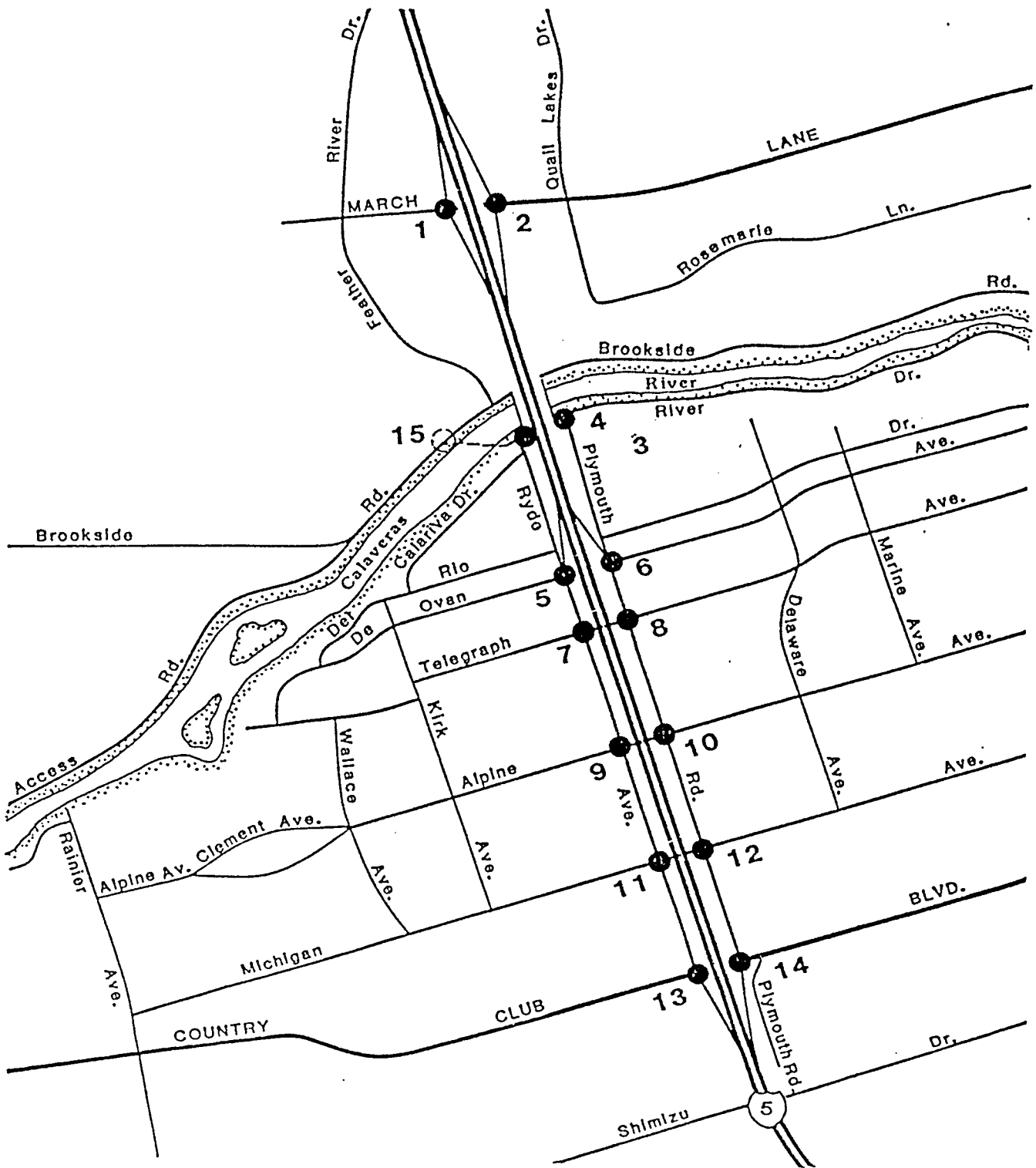
Interstate 5, which extends north/south through the study area, is a six-lane divided freeway that serves as a major regional facility while also supporting local traffic demand. South of Country Club Boulevard, I-5 becomes an eight-lane divided freeway and continues as such before returning to a six-lane facility south of Charter Way. March lane and I-5 intersect to form a grade-separated conventional diamond shaped interchange, with I-5 being the elevated roadway. South of March lane, structures have been constructed over the Calaveras River and Mokelumne Aqueduct.

March lane, a four-way roadway, is an arterial street controlled by signalization that provides significant east-west circulation between West Lane and Interstate 5. March Lane begins in the west at the Stockton City limits and extends easterly to West Lane where it terminates as a T-intersection.

Existing Traffic Operations

Establishment of current traffic operations is dependent upon roadway/intersection capacity as well as on existing average daily traffic and turning movements occurring in the peak demand periods. To assess existing traffic conditions, OMNI-MEANS, Ltd. conducted AM and PM peak hour turning movement counts at the critical intersections included in this study. Turning movement counts were performed from 7:00 - 9:00 AM and 4:00 - 6:00 PM on weekdays during January, 1988 in order to establish the peak hour intervals. In conjunction with the traffic counts, an inventory of existing control devices was also performed. The geographical locations of the critical intersections are depicted in Figure 3. Existing AM and PM peak hour turning movements are presented in Figure 4. Existing ADT counts were obtained from the City of Stockton and Caltrans.

To quantitatively evaluate existing traffic operating conditions and to provide a basis for comparison of operating conditions before and after project generated traffic is added to the street system, peak hour "Levels-of-Service" were determined. "Level-of-Service" (LOS) is a measure of the quality of traffic operations whereby a LOS grade "A" through "F", representative of progressively worsening conditions is calculated for an intersection or street segment. Table A-1 (Appendix) presents the characteristics associated with each LOS grade. As shown in Table A-1, LOS "A", "B" and "C" are considered satisfactory to most motorists, while LOS "D" is marginally acceptable. Level-of-Service "E" and "F" are associated with severe congestion and delay and are unacceptable to most motorists. Levels-of-Service were calculated utilizing methodologies and criteria documented in Transportation Research Board's Circular 212: Interim Materials on Highway Capacity.



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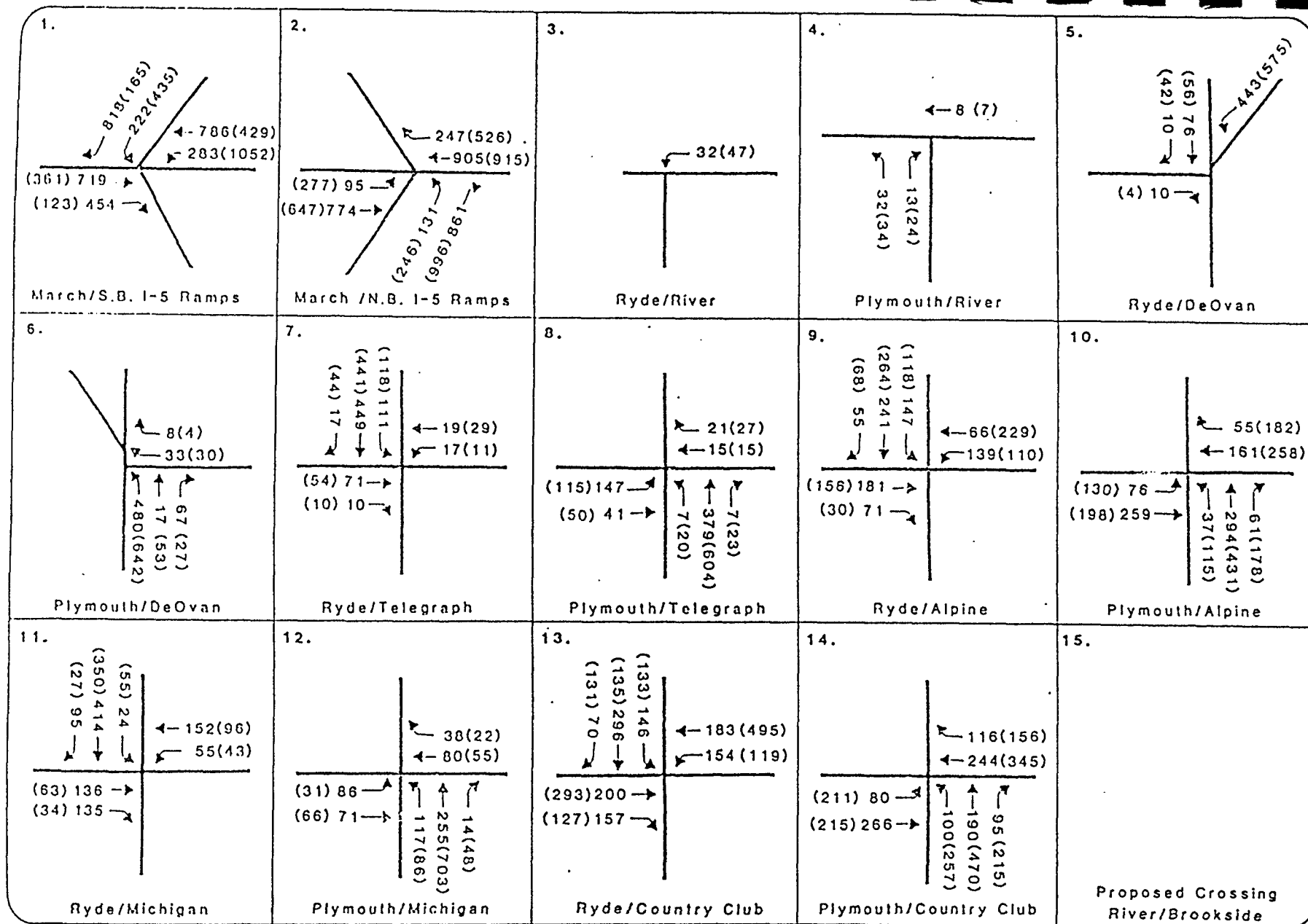
CRITICAL INTERSECTION LOCATIONS



figure 3

I-10

C - 0 6 5 5 6 4



EXISTING AM AND (PM) PEAK HOUR TRAFFIC VOLUMES



The procedure for calculating the Level-of-Service at an unsignalized intersection is based upon determining the "reserve capacity" for each intersection movement which must yield the right-of-way. Reserve capacity is a function of the volume of conflicting traffic, operating speed and type of control (stop or yield). Therefore, unlike a signalized intersection where overall traffic operation is described by one Level-of-Service grade, a level-of-Service is calculated for each movement which must yield the right-of-way at an unsignalized intersection. The Levels-of-Service at the unsignalized intersections are presented in terms of "overall" LOS and "worst case" LOS. The worst case LOS is indicative of the particular intersection movement which experiences the most significant delay. "Overall" LOS represents general intersection performance, considering all movements and delays.

The City of Stockton presently requires that service levels of "D" or better be maintained along roadway segments on a daily basis and at the intersections during the peak hours of operation. Therefore, any locations described as operating unacceptably are those which have Levels-of-Service of "E" or worse (Volume to Capacity (v/c) ratio >0.90.).

Peak Hour Intersection Operations

The existing peak hour operating conditions were established by conducting intersection capacity analyses on fourteen (14) critical intersections which are anticipated to be affected by implementation of the project. The parameters used to perform such calculations include turning movement volumes, approach lane geometrics, type of control device and signal phasing. The results of the capacity analyses are presented in the form of v/c ratios for signalized intersections and reserve capacities for unsignalized (2-way stop) locations. Four of the intersections analyzed are currently controlled by 3-way stops (or multiway stops). The service levels at multiway stops are based upon v/c ratios, however, the evaluation criteria used to analyze multiway stops is different than that used for signalized intersections.

The Level-of-Service at a four-way stop controlled intersection is based on two factors, the demand split and the number of approach lanes on each leg of the intersection. Table 1, below, presents the approximate capacity service volumes which have been derived from the 1985 Highway Capacity Manual. As Table 1 indicates, capacity is greatest when demand volume is evenly split between the crossing facilities. Where demand is not evenly split among the approaches, lesser capacities and more variable distribution of delay occurs.

TABLE 1
Four-Way Stop Controlled Intersections
Approximate Capacity Service Volumes

Demand Split	Capacity Service Volume, VPH		
	Number of Lanes		
	2 by 2	2 by 4	4 by 4
50/50	1,900	2,800	3,600
55/45	1,800	2,650	3,410
60/40	1,700	2,500	3,220
65/35	1,600	2,350	3,030
70/30	1,500	2,200	2,840

To analyze unsignalized intersections, existing traffic volumes were first compared with MUTCD peak hour traffic signal warrant volumes to identify those locations where traffic signals may already be necessary. Based on existing peak hour volumes, the eight unsignalized intersections do not meet peak hour volume warrants for signalization. Following warrant analysis, unsignalized Level-of-Service was calculated. At an unsignalized intersection, Level-of-

Service is indicative of the magnitude of delay incurred by motorists who are turning or are entering the intersection from the minor/side street (i.e., worst case level-of-Service) and "overall" LOS considers all movements and delays. Existing service levels at critical intersections in the vicinity of the project site are presented in Table 2.

TABLE 2
EXISTING INTERSECTION LEVELS-OF-SERVICE

INT. NO	LOCATION	AM PEAK HOUR		PM PEAK HOUR	
		V/C	LOS	V/C	LOS
1.	I-5 SB RAMPS/MARCH LANE	0.43	A	0.65	B
2.	I-5 NB RAMPS/MARCH LANE	0.48	A	0.69	B
3.	RYDE AVENUE/RIVER DRIVE ¹	--	A/A*	--	A/A*
4.	PLYMOUTH ROAD/RIVER DRIVE ²	--	A/A*	--	A/A*
5.	RYDE AVENUE/DE OVAN AVE ²	--	A/A*	--	A/A*
6.	PLYMOUTH ROAD/DE OVAN AVE ²	--	A/A*	--	A/A*
7.	RYDE AVENUE/TELEGRAPH AVENUE	0.21	A	0.20	A
8.	PLYMOUTH ROAD/TELEGRAPH AVENUE	0.21	A	0.25	A
9.	RYDE AVENUE/ALPINE AVENUE ³	0.32	A	0.37	A
10.	PLYMOUTH ROAD/ALPINE AVENUE ³	0.38	A	0.53	A
11.	RYDE AVENUE/MICHIGAN AVENUE ³	0.38	A	0.28	A
12.	PLYMOUTH ROAD/MICHIGAN AVENUE ³	0.26	A	0.46	A
13.	RYDE AVENUE/COUNTRY CLUB BLVD.	0.36	A	0.33	A
14.	PLYMOUTH ROAD/COUNTRY CLUB BLVD.	0.32	A	0.67	B

1 Uncontrolled Intersection

2 Minor Street Stop Controlled

3 Three-way Stop Control

* Overall/Worst Case Level-of-Service, volume to capacity ratio is not calculated at unsignalized intersections.

As indicated in Table 2, current intersection operation is satisfactory at all locations. The LOS presented in Table 2 for the intersection of I-5 northbound ramps and March Lane may be inconsistent with field observations at this location where queues have been observed to back up onto the freeway off-ramp during the peak time periods. Motorists making the northbound right turn from the off-ramp with the eastbound left turn lane at Quail Lakes Drive as their destination must traverse across two through lanes in a short distance creating a severe weaving section.

Existing Average Daily Traffic

Presented in Table 3 are the existing daily volumes and corresponding LOS for twelve roadway and freeway segments in the vicinity of the proposed Calaveras river crossing. As Table 3 indicates, all roadway segments are operating satisfactorily with the exception of March Lane east of I-5, where Level-of-

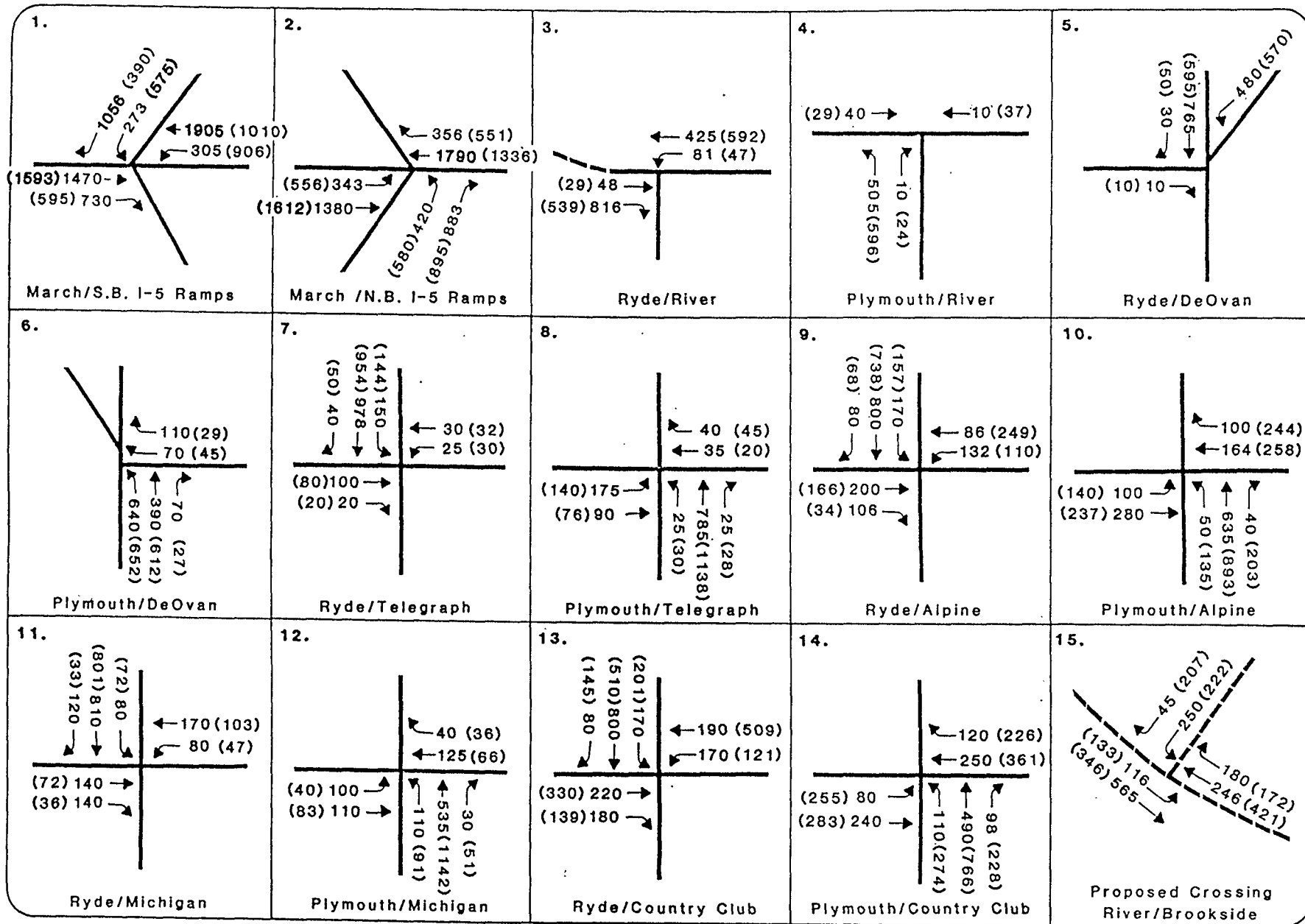
Service "F" and "E" is experienced west and east of Quail Lakes Drive, respectively.

Although by definition an existing v/c ratio cannot be greater than 1.00, the daily capacities used to calculate v/c ratios are based on typical traffic peaking characteristics. On a congested roadway segment, the peak hours of operation typically last longer than normal traffic peaks, such that the roadway is carrying peak hour volumes for longer periods of time. This results in a calculated v/c ratio greater than 1.00.

It should be noted that the daily Levels-of-Service are based on travel demand during the peak hour (assumed to be 10% of the total daily volume) and are intended to represent operating conditions during the peak hour and not over an entire twenty-four hour period. The evaluation criteria used for daily LOS assessment is presented in Table A-2, in the Appendix.

TABLE 3
EXISTING ROADWAY LEVELS-OF-SERVICE

LOCATION	AVERAGE DAILY (ADT) TRAFFIC	LOS	V/C
<u>INTERSTATE 5:</u>			
Benjamin Drive - March Lane	54,500	A	0.45
March Lane - Del Rio Drive	60,500	A	0.50
Del Rio Drive - Country Club Boulevard	51,000	A	0.43
<u>MARCH LANE:</u>			
Feather River - I-5	9,400	A	0.31
I-5 - Quail Lakes Drive	40,200	F	1.34
Quail Lakes Drive - Grouse Run Dr.	27,600	E	0.92
<u>BROOKSIDE ROAD:</u>			
W. City Limits - Feather River Drive	2,400	A	0.16
Michael Angelo Drive - McGaw Street	2,200	A	0.15
McGaw Street - Pershing Avenue	5,600	A	0.37
<u>FEATHER RIVER DRIVE:</u>			
March Lane - Brookside Road	3,300	A	0.22
<u>COUNTRY CLUB BLVD:</u>			
Fontana Avenue - I-5	6,300	A	0.21
Carlton Avenue - Marine Avenue	8,700	A	0.29



PROJECTED AM AND (PM) PEAK HOUR TRAFFIC VOLUMES



When comparing the incremental decrease in v/c ratios at the I-5/March Lane junctions due to implementation of a river crossing, it is evident that the northbound ramps intersection is improved more than at the southbound ramps. This resulted from volume decreases within the critical lane groups (use to calculate v/c ratios) in the former case and volume decreases on movements that are not critical movements in the latter case. A reduction of 16% in total peak hour volumes on March Lane is anticipated as a result of providing additional access via the proposed river crossing.

Table 4 also indicates traffic signalization would be warranted at the Alpine Avenue and Michigan Avenue intersections of Ryde Avenue and Plymouth Road. As described earlier, these locations are currently controlled by three-way stops. The LOS at these intersections indicate that the anticipated operations will be within acceptable levels. However, the criteria used for multiway stops uses higher capacities than signalized locations since vehicles are continuously departing in a uniform manner. Multiway stop control is most effective where demand on the several approaches is approximately equal. With the introduction of a new overcrossing at the Calaveras River, in conjunction with the proposed Brookside development, the north/south volumes on Ryde Avenue and Plymouth road would increase to the point that they would be much larger when compared to side street volumes. Therefore, signalization of the multi-way stop intersections is recommended in order to provide effective progression through the intersections along Ryde Avenue and Plymouth Road.

Table 5 provides a comparison between average daily traffic (ADT) on roadways under the without river crossing and with river crossing conditions. The table indicates that the primary decrease in daily volumes would occur on the segment of March Lane from Feather River Drive to Interstate 5. Also, the I-5 freeway segment south of March Lane would experience a reduction in ADT as a result of implementing an additional access to the south from the Brookside project site. Even with the reduction in volumes, the segments along March Lane would operate at an unacceptable level. (Based on existing lanes).

The proposed Calaveras River crossing is anticipated to carry 13,400 vehicles on a daily basis which corresponds to a service level of "D".

TABLE 4
PEAK HOUR INTERSECTION LEVELS-OF-SERVICE
CUMULATIVE CONDITION PLUS BROOKSIDE DEVELOPMENT
WITH PROPOSED RIVER CROSSING

INT. NO	LOCATION	AM PEAK HOUR		PM PEAK HOUR	
		V/C	LOS	V/C	LOS
1.	I-5 SB RAMPS/MARCH LANE	1.22	F	1.03	F
2.	I-5 NB RAMPS/MARCH LANE	1.13	F	1.27	F
3.	RYDE AVENUE/RIVER DRIVE ¹	--	B/B	--	B/C
4.	PLYMOUTH ROAD/RIVER DRIVE ²	--	C/D	--	D/E
5.	RYDE AVENUE/DE OVAN AVENUE ²	--	A/A	--	A/A
6.	PLYMOUTH ROAD/DE OVAN AVENUE ²	--	A/C	--	A/C
7.	RYDE AVENUE/TELEGRAPH AVENUE	0.38	A	0.37	A
8.	PLYMOUTH ROAD/TELEGRAPH AVENUE	0.35	A	0.40	A
> 9.	RYDE AVENUE/ALPINE AVENUE ³	0.67	C	0.65	C
> 10.	PLYMOUTH ROAD/ALPINE AVENUE ³	0.52	B	0.84	D
> 11.	RYDE AVENUE/MICHIGAN AVENUE ³	0.66	C	0.53	B
> 12.	PLYMOUTH ROAD/MICHIGAN AVENUE ³	0.45	B	0.69	C
13.	RYDE AVENUE/COUNTRY CLUB BLVD.	0.51	A	0.46	A
14.	PLYMOUTH ROAD/COUNTRY CLUB BLVD.	0.44	A	0.85	D
> 15.	BROOKSIDE RD/RIVER DR. ⁴	0.57	A	0.67	B

(New Intersection)

-
- ¹ Uncontrolled Intersection
 - ² Minor Street Stop Controlled
 - ³ Three-way Stop Control
 - ⁴ Projected peak hour volumes meet MUTCD warrants for signalization, therefore, the intersection was analyzed assuming signal control.
 - > Meets MUTCD peak hour volume warrants for signalization.
 - * Overall/Worst Case Level-of-Service, volume to capacity ratio is not calculated at unsignalized intersections.

TABLE 5
EXISTING ROADWAY LEVELS-OF-SERVICE
CUMULATIVE CONDITIONS WITH BROOKSIDE DEVELOPMENT

LOCATION	WITHOUT RIVER CROSSING			WITH PROPOSED RIVER CROSSING		
	ADT	LOS	V/C	ADT	LOS	V/C
<u>INTERSTATE 5:</u>						
Benjamin Drive - March Lane	75,400	C	0.63	75,400	C	0.63
March Lane - Del Rio Drive	88,700	C	0.74	76,700	C	0.64
Del Rio Drive - Country Club Boulevard	72,800	C	0.61	66,500	C	0.55
<u>MARCH LANE:</u>						
Feather River - I-5	55,300	F	1.84	41,900	F	1.40
I-5 - Quail Lakes Drive	57,900	F	1.93	54,600	F	1.82
Quail Lakes Drive - Grouse Run Drive	42,400	F	1.41	41,800	F	1.39
<u>BROOKSIDE ROAD:</u>						
Feather River Drive - McGaw St.	4,400	A	0.29	4,200	A	0.28
McGaw St - Pershing Avenue	8,200	A	0.55	8,000	A	0.53
<u>FEATHER RIVER DRIVE:</u>						
March Lane - Brookside Rd.	6,800	A	0.45	8,200	A	0.55
<u>COUNTRY CLUB BLVD:</u>						
Fontana Avenue - I-5	6,500	A	0.22	6,900	A	0.23
Carlton Avenue - Marine Ave.	9,000	A	0.30	10,000	A	0.33
<u>CALAVERAS RIVER CROSSING:</u>						
Brookside Road - Ryde Avenue	N/A	-	--	13,400	D	0.89

MITIGATION MEASURES

Once the impact locations have been identified, infrastructure improvements needed to mitigate impacts to a less than significant level were prescribed. Improvements have been identified where traffic demand exceeds ninety-percent (90%) of the theoretical capacity of an intersection or roadway segment. The assumed maximum improvements consist of four through lanes, two (dual) left turn lanes, and an exclusive right-turn lane for each intersection approach. The maximum roadway widening assumed for this analysis was eight travel lanes, four in each direction, which is consistent with the maximum intersection channelization described above. All impacted intersection locations could be reduced to a level of insignificance. Also, all impacted roadway segments could be improved to acceptable service levels. The segment of March Lane between I-5 and Quail Lakes Drive would attain LOS "D" operating conditions with eight travel lanes. However, with eight lanes along this segment, the V/C would be 0.89 (upper limit of the LOS "D" range). Previous studies indicate that eight travel lanes on this segment of March Lane is not feasible within existing right-of-way. The remaining two segments of March Lane considered for this analysis would require widening to six lanes. The segment from Feather River to I-5 would operate at the upper limit of the LOS "D" range with six lanes.

Table 6 lists the recommended intersection improvements needed to ameliorate impact locations to acceptable service levels. The reduction in peak hour travel demand through the I-5/March Lane northbound ramp junction would reduce the required intersection channelization improvements when compared to the "without" river crossing condition. I-5 southbound ramps at March Lane would experience improved operating conditions, however, due to the fact that the decreases in volumes are not within the critical lane groups, the improvements are the same as those under the "without" river crossing alternative.

TABLE 6
INTERSECTION MITIGATION MEASURES
- CUMULATIVE WITH BROOKSIDE
AND CALAVERAS RIVER CROSSING -

INT. NO.	INTERSECTION	MITIGATION	V/C	MITIGATED		LOS
				AM	PM	
				LOS	V/C	LOS
1.	I-5 SB RAMPS/MARCH LANE	ADD WB THRU, ADD EB THRU, ADD WB DEPARTURE LANE TO PERMIT SB FREE RIGHTS	0.61	B	0.85	D
2.	I-5 NB RAMPS/MARCH LANE	ADD NB LEFT ADD EB LEFT	0.86	D	0.87	D
3.	RYDE AVENUE/RIVER DRIVE	PROVIDE STOP SIGN CONTROL ON WB LEFT TURN MOVEMENT	--	B/C	--	A/C
4.	PLYMOUTH ROAD/RIVER DRIVE	PROVIDE STOP SIGN CONTROL ON WB/EB APPROACH	--	A/C	--	A/C
5.	RYDE AVENUE/DE OVAN AVE.	NONE	--	A/A	--	A/A
6.	PLYMOUTH ROAD/DE OVAN AVE.	NONE	--	A/C	--	A/C
7.	RYDE AVENUE/TELEGRAPH AVE.	NONE	0.38	A	0.37	A
8.	PLYMOUTH RD./TELEGRAPH AVE.	NONE	0.35	A	0.40	A
9.	RYDE AVENUE/ALPINE AVENUE	SIGNALIZE	0.45	A	0.38	A

TABLE 6, (CONT)
INTERSECTION MITIGATION MEASURES
- CUMULATIVE WITH BROOKSIDE
AND CALAVERAS RIVER CROSSING -

INT. NO.	INTERSECTION	MITIGATION	V/C	MITIGATED		LOS
				AM	PM	
				LOS	V/C	LOS
10.	PLYMOUTH ROAD/ALPINE AVE.	SIGNALIZE	0.33	A	0.57	A
11.	RYDE AVENUE/MICHIGAN AVE.	SIGNALIZE	0.49	A	0.32	A
12.	PLYMOUTH RD./MICHIGAN AVE.	SIGNALIZE	0.35	A	0.40	A
13.	RYDE AVE./COUNTRY CLUB BLVD.	NONE	0.51	A	0.46	A
14.	PLYMOUTH RD./COUNTRY CLUB BLVD.	NONE	0.44	A	0.85	D
15.	BROOKSIDE RD./RIVER RD.	SIGNALIZE PROVIDE SB LEFT AND RIGHT, WB RIGHT + THRU, EB LEFT AND THRU	0.57	A	0.67	B

TABLE A-2
EVALUATION CRITERIA FOR LEVEL OF SERVICE

Facility Type	Level of Service "C" ADT Traffic Volumes	Level of Service "D" ADT Traffic Volumes	Level of Service "E/F" ADT Traffic Volumes
Urban Streets	V/C = 0.71 - 0.80	V/C = 0.81 - 0.90	V/C = 0.91 - 1.00
Two Lane	10,700 - 12,000	12,000 - 13,500	13,500 - 15,000
Four Lane	21,300 - 24,000	24,000 - 27,000	27,000 - 30,000
Six Lane	32,000 - 36,000	36,000 - 40,500	40,500 - 45,000
Eight Lane	42,600 - 48,000	48,000 - 54,000	54,000 - 60,000
Freeway	V/C = 0.55 - 0.77	V/C = 0.78 - 0.93	V/C = 0.94 - 1.00
Four Lane	44,000 - 62,000	62,000 - 74,000	76,000 - 80,000
Six Lane	66,000 - 94,000	94,000 - 112,000	114,000 - 120,000
Eight Lane	88,000 - 125,000	125,000 - 149,000	152,000 - 160,000
Ten Lane	110,000 - 156,000	156,000 - 186,000	186,000 - 200,000
Twelve Lane	132,000 - 187,000	187,000 - 223,000	223,000 - 240,000

Source: Transportation Research Board, Circular 212 and the 1965 Highway Capacity Manual.

EXHIBIT A-1
LEVEL OF SERVICE DEFINITIONS

LEVEL-OF SERVICE	INTERSECTION	HIGHWAY
"A"	Uncongested operations, all queues clear in a single-signal cycle. V/C = 0.00 - 0.60*	Free flow vehicles unaffected by other vehicles in the traffic stream.
"B"	Uncongested operations, all queues clear in a single cycle. V/C = 0.61 - 0.70	Higher speed range of stable flow. Volume 50 percent of capacity or less.
"C"	Light congestion, occasional back-ups on critical approaches. V/C = 0.71 - 0.80	Stable flow with volumes not exceeding 75 percent capacity.
"D"	Significant congestion of critical approaches but intersection functional. Cars required to wait through more than one cycle during short peaks. No long queues formed. V/C = 0.81 - 0.90	Upper end of stable flow conditions. Volumes do not exceed 90 percent of capacity.
"E"	Severe congestion with some long standing queues on critical approaches. Blockage of intersection may occur if traffic signal does not provide for protected turning movements. Traffic queue may block nearby intersection(s) upstream of critical approach(es). V/C = 0.91 - 1.00	Unstable flow at roadway capacity. Operating speeds 30 to 25 mph or less.
"F"	Total breakdown, stop-and-go operation. V/C > 1.00	Stop-and-go traffic with operating speeds less than 30 mph.

* V/C ratio same for highway description.

Appendix J

AIR QUALITY MODELING

J-1

C-065579

C-065579

J-2

C - 0 6 5 5 8 0

C-065580

AIR QUALITY MODELING

The prevailing wind direction in the study area is from the west, resulting from marine breezes through the Carquinez Strait. During the winter, the sea breezes diminish and winds from the northeast occur more frequently. However, winds from the west still predominate.

Air Pollution Terminology

Any discussion of air pollution issues requires an understanding of technical air quality terms. It is especially important to understand the distinction between air pollutant emissions and ambient air quality.

The term "pollutant emissions" refers to the amount (usually stated as a weight) of one or more specific compounds introduced into the atmosphere by a source or group of sources. In practice, most pollutant emissions data are presented as "emission rates" (amount of pollutants emitted during a particular period of time).

The term "ambient air quality" refers to the atmospheric concentration (amount in a specified volume of air) of a specific compound as actually experienced at a particular geographic location (which may be some distance from the source of the relevant pollutant emissions). Measured ambient air quality levels are determined by the types and amounts of pollutants emitted into the atmosphere; the physical processes (meteorology) affecting the distribution, dilution, and removal of these pollutants; and any chemical reactions that transform pollutant emissions into other chemical substances.

Air pollutants are often characterized as being "primary" or "secondary" pollutants. Primary pollutants are those emitted directly into the atmosphere (such as carbon monoxide (CO), sulfur dioxide, lead particulates, and hydrogen sulfide). Secondary pollutants (e.g., ozone, nitrogen dioxide, and sulfate particulates) are those formed through chemical reactions in the atmosphere that usually involve primary pollutants, normal constituents of the atmosphere, and other secondary pollutants. Those compounds that react to form secondary pollutants are often referred to as reactive pollutants, pollutant precursors, or precursor emission products. Some air pollutants (such as many organic gases and suspended particulate matter) are a combination of primary and secondary pollutants.

The distinction between primary and secondary pollutants has important air quality management implications. The ambient concentration of primary pollutants depends on the spatial concentration of the emission sources, the rate of pollutant emissions, and the degree to which the emitted pollutants are dispersed or removed from the atmosphere between the emission source and the location of interest. Air quality problems involving primary pollutants such as CO can usually be traced to a single pollutant source (or a concentrated group of sources) emitting large quantities of the pollutant. The responsible emission source will usually be relatively close to the location of the air quality problem. The distance between the emission source

and the location of a ground-level air quality problem depends largely on the height at which the emissions are released into the atmosphere.

When an air quality problem involves a secondary pollutant such as ozone, the spatial relationship between emission sources and ambient air quality problems becomes much more complicated. Because secondary pollutants are not emitted directly into the atmosphere, observed ambient concentrations may not show a clear correlation with the spatial distribution of sources emitting the pollutant precursors. The time factor involved in the chemical reactions producing secondary pollutants allows emissions from numerous sources to become dispersed and mixed together. As a result, the observed ambient pollutant concentrations are due as much to the cumulative areawide emissions of precursors as to the spatial concentration of emission sources.

Ozone Precursor Emissions

Ozone, a major component of photochemical smog, is the secondary pollutant of greatest concern in most portions of California. The pollutant emissions generally categorized as ozone precursors fall into two broad groups of chemicals: nitrogen oxides and organic compounds. A large number of terms are used to refer to these groups of ozone precursors. As indicated below, the various terms are seldom used in a rigorous chemical sense.

The terms "nitrogen oxides" and "oxides of nitrogen" are often used interchangeably to refer to the combination of nitric oxide (designated by the chemical symbol NO) and nitrogen dioxide (designated by the chemical symbol NO₂). This combination of nitrogen oxides is often designated by the symbol NO_x. Occasionally, some additional nitrogen compounds are accounted for in the NO_x measurements or estimates (there are actually seven different oxides of nitrogen in the chemical sense). Nitrogen dioxide is itself a secondary pollutant formed primarily from nitric oxide.

Organic compound precursors of ozone are routinely described by a number of variations on three terms: hydrocarbons (HC), organic gases (OG), and organic compounds (OC). These three basic terms are often modified by adjectives such as: total, reactive, or volatile. The result is a series of several potential acronyms: HC, THC, RHC, TOG, ROG, TOC, ROC, VOC. In addition, the acronym NMHC (nonmethane hydrocarbons) can also be used.

To a chemist, most of these terms differ from each other in some significant way. In the air pollution control field, however, they are used as two groups of interchangeable terms. THC, TOG, and TOC imply a comprehensive grouping of chemicals including some (such as methane) that have no significant role in smog photochemistry. The other terms (HC, RHC, NMHC, ROG, ROC, and VOC) imply a grouping of chemicals that all play some role in smog photochemistry. From a purely chemical standpoint, the "hydrocarbon" terminology (HC, THC, RHC, and NMHC) is often inappropriate. The phrase "reactive organic compounds" (ROC) is often the most accurate ozone precursor terminology.

Ozone is primarily a summer/fall period pollution problem. Ozone is not emitted directly into the air but is formed through a complex series of chemical reactions involving other compounds that are directly emitted. The directly emitted pollutants involved in this reaction are ROG and NOx. The time period required for these reactions allows the reacting compounds to be spread over a large area, which produces a regional pollution problem. Ozone problems are the cumulative result of regional development patterns, rather than the result of a few significant emission sources.

Carbon Monoxide

CO is primarily a winter period pollution problem. Motor vehicle emissions are the dominant source of CO in most areas. CO is transported away from the emission source and dispersed. CO problems are therefore usually localized, resulting from a combination of high traffic volumes and significant traffic congestion.

Outdoor CO levels are a fairly reliable indicator of potential indoor CO levels. Since CO is not chemically reactive and is poorly soluble in water, it is not absorbed onto surfaces or otherwise removed from outdoor air entering a building through open doorways, open windows, or building ventilation systems.

Dispersion Modeling

Predicting the ambient air quality impacts of pollutant emissions requires an assessment of the transport, dispersion, chemical transformation, and removal processes that affect pollutant emissions after their release from a source. Gaussian dispersion models are frequently used for such analyses. The term "Gaussian dispersion" refers to a general type of mathematical equation used to describe the horizontal and vertical distribution of pollutants downwind from an emission source.

Gaussian dispersion models treat pollutant emissions as being carried downwind in a defined plume, subject to horizontal and vertical mixing with the surrounding atmosphere. The plume spreads horizontally and vertically with a reduction in pollutant concentrations as it travels downwind. Mixing with the surrounding atmosphere is greatest at the edge of the plume, resulting in lower pollutant concentrations outward (horizontally and vertically) from the center of the plume. This decrease in concentration outward from the center of the plume is treated as following a Gaussian ("normal") statistical distribution. Horizontal and vertical mixing generally occur at different rates. Because turbulent motions in the atmosphere occur on a variety of spatial and time scales, vertical and horizontal mixing also vary with distance downwind from the emission source.

The CALINE3 Model

The ambient air quality effects of highway traffic emissions were evaluated using the CALINE3 dispersion model (Benson 1979). While a newer version of this dispersion model has been released, CALINE4, the technical

differences of the new model represent only a "fine tuning" of the earlier model. This is especially true with respect to the technique used in this analysis. The main difference between CALINE3 and CALINE4 as it is applied in this report are the different input and output formats. Had the dispersion modeling used CALINE4, no significant differences would have been expected over the CALINE3 modeling used in this analysis.

CALINE3 is a Gaussian dispersion model specifically designed to evaluate air quality impacts of highway projects. Each highway link analyzed in the model is treated as a sequence of short segments. Each segment of a highway link is treated as a separate emission source producing a plume of pollutants that disperses downwind. Pollutant concentrations at any specific location are calculated using the total contribution from overlapping pollution plumes originating from the sequence of roadway segments.

The discussion of "pollution plumes" above may suggest that pollution concentrations at a given location would be the average, not the sum, of the incremental concentrations from each overlapping plume. Even though pollution plume terminology suggests the analogy of physically mixing fluids with different pollutant concentrations, such an analogy is inappropriate in the case of atmospheric dispersion models. The flaw in the fluid mixing analogy involves the total volume of fluid present as additional source contributions are added. The volume of "carrier fluid" (air) at a receptor point remains constant regardless of the number of overlapping pollution plumes affecting the site.

The faulty fluid mixing analogy can be visualized as buckets of water with different salt concentrations poured into an empty swimming pool. The resulting pollutant (salt) concentration is the average of the concentrations in the incremental additions of salty water. The actual situation with atmospheric dispersion modeling, however, is more like pouring different-sized jars of salt into a swimming pool already filled with water. The resulting pollutant (salt) concentration is the sum of the effects of the incremental additions of salt.

When winds are essentially parallel to a highway link, pollution plumes from all roadway segments overlap. This produces high concentrations near the roadway (near the center of the overlapping pollution plumes), and low concentrations well away from the highway (at the edges of the overlapping pollution plumes). When winds are at an angle to the highway link, pollution plumes from distant roadway segments make essentially no contribution to the pollution concentration observed at a receptor location. Under such cross-wind situations, pollutant concentrations near the highway are lower than under parallel wind conditions (fewer overlapping plume contributions), while pollutant concentrations away from the highway may be greater than would occur with parallel winds (near the center of at least some pollution plumes).

The CALINE3 model employs a "mixing cell" approach to estimating pollutant concentrations over the roadway itself. The size of the mixing cell over each roadway segment is based on the width of the "traffic lanes" of the highway plus an additional turbulence zone on either side. Parking lanes and roadway shoulders are not counted as traffic lanes. The height of the mixing cell is set at 10 feet.

Pollutants emitted along a highway link are treated as being well mixed within the mixing cell volume due to mechanical turbulence from moving vehicles and convective mixing due to the temperature of vehicle exhaust gases. Pollutant concentrations downwind from the mixing cell are calculated using horizontal and vertical dispersion rates that are a function of various meteorological and ground surface conditions.

Modeling Procedures

Roadway and Traffic Conditions. The air quality analysis is based on peak-hour traffic volumes and volume:capacity ratios described in Section E. For each of the levels of traffic, peak hour vehicle speeds were developed based on volume:capacity ratios and equations producing speed versus volume:capacity ratio curves presented in the Highway Capacity Manual (Highway Research Board 1965). Roadway segments were treated as nondirectional; traffic volumes and speeds in both directions were assigned to a single segment. Because each segment represented traffic leaving as well as approaching intersections, a minimum speed of 5 miles per hour was used.

Receptor Locations. As noted in Section F, receptor locations were chosen to analyze congested intersections. In determining which intersection to analyze, the critical intersections described in Section E were screened. Since motor vehicle CO emission rates are strongly dependent on speed (low vehicle speeds result in high CO emission rates) and traffic volume, the intersections with the worst volume-to-capacity ratios and highest traffic volume were chosen.

The receptors were located at buildings on developed corners of the intersection. If there was no existing development at a specific corner of the intersection being analyzed, the receptor was located 50 feet from the edge of the roadway. This distance is considered to be an average set-back, and represents the closest point at which people would experience long-term exposure to roadway-generated CO.

Vehicle Emission Rates. Vehicle emission rates have been estimated using the California Air Resources Board's EMFAC7pc computer program. The EMFAC7pc program estimates vehicle emission rates as a function of seven parameters: calendar year of interest, air temperature, vehicle fleet mix (six basic vehicle types), age distribution of each vehicle type, accumulated mileage for each vehicle type by vehicle age, average vehicle speed, and vehicle operating mode (a function of prior parking duration, engine type, and time since the engine was started). The EMFAC7pc program uses a standard set of vehicle age distributions and mileage accumulation parameters. The other five parameter sets can be varied to produce vehicle emission rate estimates for a wide variety of conditions.

All vehicle emission rates used for the microscale air quality analyses in this EIR were developed for 1990 and 2010 conditions with typical winter air temperatures (40°F). Vehicle fleet mix estimates, operating mode percentages, and CO emission rates at various average speeds are presented in Table Z-1.

Table Z-1

Weighted Composite Emission Rates for Carbon Monoxide

Year: 1990
 Temp: 40 degrees F
 I&M Adjustment 16.80%

Year: 2010
 Temp: 40 degrees F
 I&M Adjustment 25.00%

%VMT mix:
 LDA/LDT/MDT/HDG/HDD/MC
 67.1/23.3/2.3/3.1/3.3/.96

%VMT mix:
 LDA/LDT/MDT/HDG/HDD/MC
 67.1/23.3/2.3/3.1/3.3/.96

Operating mode mix:
 %cold %hot %stable
 40 22 38

Operating mode mix:
 %cold %hot %stable
 40 22 38

Speed Miles/ Hour	grams/mile no I&M	grams/mile w/I&M	grams/mile no I&M	grams/mile w/I&M
5	122.71	102.09	74.46	55.85
6	115.97	96.49	71.28	53.46
7	109.24	90.89	68.11	51.08
8	102.50	85.28	64.93	48.70
9	95.77	79.68	61.76	46.32
10	89.03	74.07	58.58	43.94
11	84.95	70.68	56.18	42.14
12	80.87	67.29	53.78	40.34
13	76.80	63.89	51.39	38.54
14	72.72	60.50	48.99	36.74
15	68.64	57.11	46.59	34.94
16	65.73	54.69	44.72	33.54
17	62.82	52.27	42.86	32.14
18	59.91	49.85	40.99	30.74
19	57.00	47.42	39.13	29.34
20	54.09	45.00	37.26	27.95
25	43.03	35.80	29.90	22.43
30	34.42	28.64	24.07	18.05
35	27.72	23.06	19.45	14.59
40	22.53	18.74	15.78	11.84
45	18.57	15.45	12.88	9.66
50	15.54	12.93	10.60	7.95
55	13.14	10.93	8.84	6.63

The emission rates presented in Table Z-1 include an adjustment for implementation of a motor vehicle inspection and maintenance (I&M) program. A biennial I&M program was established in the San Joaquin County area in April 1988. No I&M effectiveness was assumed for existing traffic conditions. The year 1990 is the first year an emissions reduction credit was assumed; a credit of 16.8 percent was applied based on estimates made by the California I&M Review Committee (April 1987). A 25-percent I&M credit was assumed for 2010 traffic conditions.

CALINE3 Parameters. The CALINE3 model was run using an averaging time of 60 minutes, a surface roughness factor of 150 cm, and settling and deposition velocities of 0 cm/second. Receptor heights were set at 5 feet. All roadways were at-grade, and assigned a relative elevation of 0 feet. Mixing zone widths were based on the number of lanes, assuming a standard width of 12 feet, and from aerial photographs. An adjacent turbulence zone of 10 feet was added to each side of the roadway where speeds were estimated to be greater than 20 mph.

All CALINE3 runs assumed a wind speed of 1.0 meter/second (2.2 mph), a ground-level temperature inversion (stability class F), and a mixing height limit of 1,000 meters (3,280 feet). Wind directions were varied in 10-degree increments to identify the situation producing the highest total pollutant concentration at each receptor location, considering the alignments of all modeled roadways.

Potential 8-hour average CO levels were estimated from predicted peak hour levels. Data from permanent monitoring stations and special studies have shown that 8-hour CO levels typically are 55-65 percent of the included peak hour value. Based on these ratios, 8-hour CO levels were estimated at 60 percent of the afternoon peak hour value.

Background Concentrations. The air quality analysis assumed peak hour ambient (background) levels. The values are based on a 2.5 ppm current year and 1.4 ppm future year 8-hour average ambient level recommended by the EPA (U. S. Environmental Protection Agency 1978). The values recommended by EPA were adjusted to reflect the 60 percent 8-hour:peak hour ratio. For this analysis, the assumed background CO concentrations for the current year and for the future year are shown in Table Z-2.

Regional Air Quality

The air quality impacts of a project that are of regional importance are principally changes in ozone concentrations. CO is emitted directly into the air, has an immediate local impact, and then disperses over a relatively short distance. On the other hand, ozone is a regional photochemical pollutant with different characteristics. Ozone is not emitted directly to the atmosphere but is the result of a complex chemical reaction in the atmosphere in the presence of sunlight.

Because the formation of ozone involves a time delay of several hours, ozone concentrations are much more uniform over an area, with the highest concentrations found downwind of the urban area. Ozone also can be

Table Z-2. Background Carbon Monoxide Concentrations
in Parts Per Million

	Peak Hour	8-Hour Average
Current Year	4.2	2.5
Future year	2.3	1.4

Source: U. S. Environmental Protection Agency 1978.

transported long distances by the wind, so that ozone created by Sacramento emissions may affect other areas of the Sacramento Valley and the Sierra Nevada. Because ozone is an indirect pollutant, resulting from precursors, the magnitude of regional air quality impacts is measured by changes in the amounts of precursors.

URBEMIS #2

The estimates of ROC and NOx emissions were made using URBEMIS #2, a program that estimates the emissions which result from various land use development projects. Land use projects can include residential uses such as single-family dwelling units, apartments and condominiums, and nonresidential uses such as shopping centers, office buildings, and industrial parks. URBEMIS #2 contains default values for much of the information needed to calculate emissions. However, project-specific, user-supplied information can also be used when it is available.

Program Parameters. In the case of the proposed project and various project alternatives, default values for fleet mix and cold start percentages were used. All other values were user-specified. The user-specified assumptions for all the URBEMIS #2 runs are shown in Table Z-3.

5-12

	Trip Types ^b				
	Residential Home-Work	Residential Home-Shop	Residential Home-Other	Commercial Work	Commercial Non-Work
Trip Length (miles)	6.0	2.6	3.4	5.4	3.5
Percent Cold Start	87.7	38.4	57.0	76.6	26.6
Trip Speed	35	35	35	35	35
Percent Trip	27.3	21.2	51.5		

^b These are default input assumptions for URBEMIS #2.

Appendix K

TECHNICAL INFORMATION ABOUT NOISE ANALYSIS

K-1

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K-2

C-065592

C-065592

Background Information of Noise

Introduction

Sound travels through the air as waves of minute air pressure fluctuations caused by the vibration of a noise source. In general, sound waves travel away from the noise source as an expanding spherical surface. The energy contained in a sound wave is consequently spread over an increasing area as it travels away from the source. This results in a decrease in loudness at greater distances from the noise source.

Measurements and descriptions of sounds are usually based on various combinations of the following factors:

- o the vibrational frequency characteristics of the sound, measured as sound wave cycles per second (Hertz); this determines the "pitch" of a sound;
- o the total sound energy being radiated by a source, usually reported as a sound power level;
- o the pressure changes experienced at a particular location, usually measured as a sound pressure level; the frequency characteristics and sound pressure level combine to determine the "loudness" of a sound at a particular location;
- o the duration of a sound; and
- o the changes in frequency characteristics or pressure levels through time.

Most sound measurements are based on sound pressure levels at various frequency ranges, with results reported using a decibel (dB) scale. Decibel scales are a logarithmic index based on a ratio of the actual pressure fluctuations generated by sound waves compared to a standard reference pressure value.

General Purpose Decibel Scales

Most sounds consist of a broad range of sound frequencies. Because the human ear is not equally sensitive to all frequencies, a large number of frequency-weighting schemes have been used to develop noise-measuring instruments that approximate the way the human ear responds to noise

levels. The "A-weighted" decibel scale (dBA) is the most widely used for this purpose. The A-weighting scale significantly reduces the measured pressure level for low frequency sounds, while slightly increasing the measured pressure level for some high frequency sounds. Figure Y-1 illustrates dBA levels associated with a variety of noise sources.

Other frequency-weighting schemes are used for specialized purposes. The "C-weighted" decibel scale (dBC) is often used to characterize low frequency sounds capable of inducing vibrations in buildings or other structures. The C-weighting scale does not significantly reduce the measured pressure level for low frequency components of a sound.

Varying noise levels are often described in terms of the equivalent constant decibel level. Equivalent noise levels (Leq) are used to develop single-value descriptions of average noise exposure over various periods of time. Such average noise exposure ratings often include additional weighting factors for annoyance potential due to time of day or other considerations. The Leq data used for these average noise exposure descriptors generally use A-weighted sound level measurements.

Decibel Scales Reflecting Annoyance Potential

Average noise exposure over a 24-hour period is often presented as a day-night average sound level (Ldn). Ldn values are calculated from hourly Leq values, with the Leq values for the nighttime period (10 p.m.-7 a.m.) increased by 10 dB to reflect the greater disturbance potential from nighttime noises.

The community noise equivalent level (CNEL) is also used to characterize average noise levels over a 24-hour period, with weighting factors for evening and nighttime noise levels. Leq values for the evening period (7 p.m.-10 p.m.) are increased by 5 dB, while Leq values for the nighttime period (10 p.m.-7 a.m.) are increased by 10 dB. Under common circumstances, Ldn measurements are slightly lower than CNEL measurements. Except in situations with unusually high evening period (7 p.m.-10 p.m.) noise levels, Ldn measurements will be within 1.5 dB of CNEL measurements.

It should be noted that single-value average noise descriptors (such as CNEL or Ldn values) are most appropriately applied to variable but relatively continuous sources of noise. Typical urban noise conditions, highway traffic, and major commercial airports are examples where CNEL and Ldn descriptors are most appropriate.

Working With Decibel Values

The nature of dB scales means that individual dB ratings for different noise sources cannot be added directly to give the dB rating of the combination of these sources. Two noise sources producing equal dB ratings at a given location will produce a composite noise level 3 dB greater than either sound alone. When two noise sources differ by 10 dB, the composite

Figure Y-1
Weighted Sound Levels and Human Response

<u>SOUND SOURCE</u>	<u>dB (A) *</u>	<u>RESPONSE CRITERIA</u>
	—150	
Carrier Deck Jet Operation	—140	Painfully Loud
	—130	Limit Amplified Speech
Jet Takeoff (200 feet)	—120	
Discotheque		Maximum Vocal Effort
Auto Horn (3 feet)		
Riveting Machine	—110	
Jet Takeoff (2,000 feet)		
Shout (0.5 feet)	—100	
N.Y. Subway Station		Very Annoying
Heavy Truck (50 feet)	— 90	Hearing Damage (8 hours)
Pneumatic Drill (50 feet)		
	— 80	Annoying
Freight Train (50 feet)		
Freeway Traffic (50 feet)	— 70	Telephone Use Difficult
		Intrusive
Air Conditioning Unit (20 feet)	— 60	
Light Auto Traffic (50 feet)		
	— 50	Quiet
Living room		
Bedroom	— 40	
Library		
Soft Whisper (15 feet)	— 30	Very Quiet
Broadcasting Studio	— 20	
	— 10	Just Audible
	— 0	Threshold of Hearing

*Typical A - Weighted sound levels taken with a sound-level meter and expressed as decibels on the scale. The "A" scale approximates the frequency response of the human ear.

Source: U. S. Council on Environmental Quality 1970.

noise level will be only 0.4 dB greater than the louder source alone. Most people have difficulty distinguishing the louder of two noise sources that differ by less than 1.5-2 dB. In general, a 10-dB increase in noise level is perceived as a doubling in loudness. A 2-dB increase represents a 15 percent increase in loudness. Figure Y-2 illustrates the relationship between decibel changes and perceived loudness.

Sound levels from an isolated noise source will typically decrease by about 6 dB for every doubling of distance away from the noise source. When the noise source is essentially a line (i.e., vehicle traffic on a highway), noise levels decrease by about 3 dB for every doubling of distance.

Noise Descriptors for Brief Noise Events

The annoyance potential of intermittent or short duration noise events is often underestimated by 24-hour average noise descriptors. Aircraft activity at general aviation airports, testing of emergency generators, pile driving, and blasting activities may require evaluations using other types of noise descriptors.

Peak noise levels, the duration of individual noise events, and the repetition pattern of events are often used to describe intermittent or short duration noise conditions. Statistical descriptions (percent of time when noise levels exceed various thresholds) are also used to characterize noise conditions over relatively brief periods of time. Noise events lasting more than half a minute can be characterized by the Leq of the event.

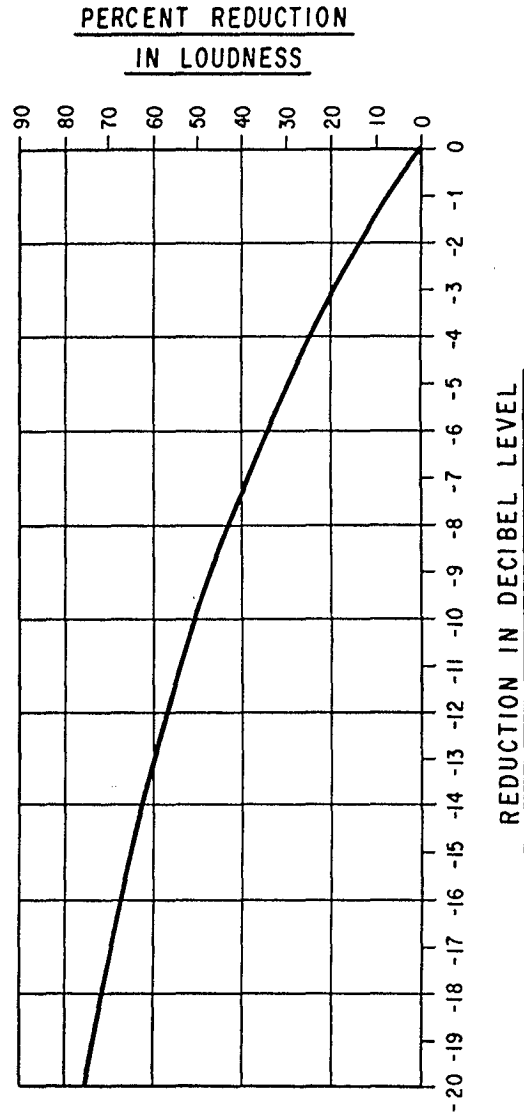
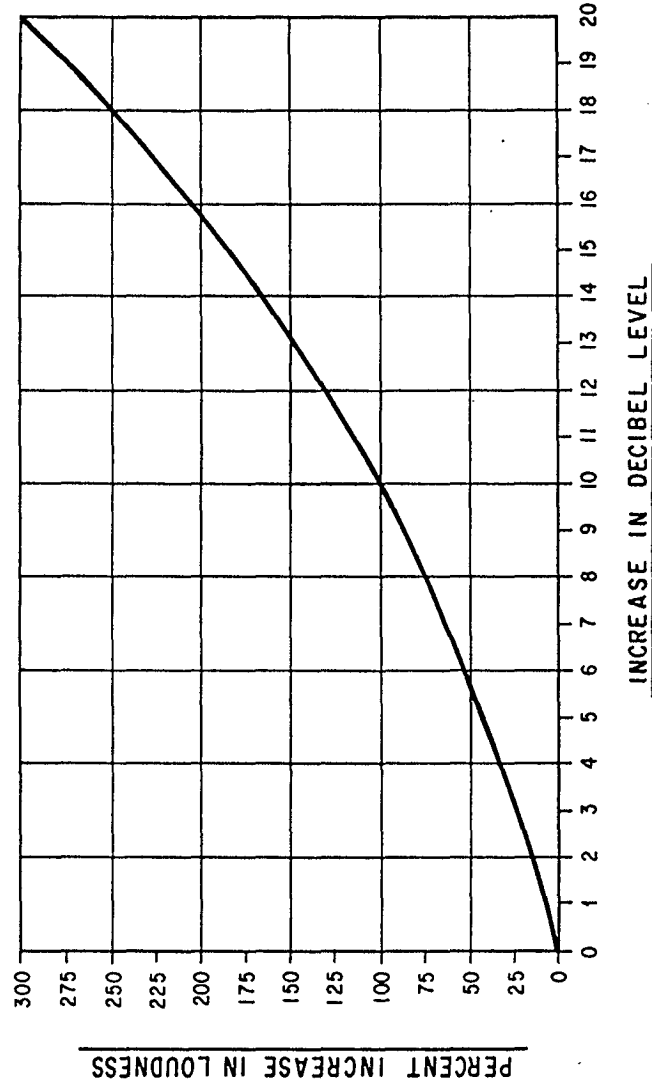
Individual noise events of brief duration (no more than several seconds) are sometimes characterized using the single event noise exposure level (SENEL) descriptor. The SENEL of a noise event is calculated as the cumulative (not average) A-weighted sound exposure during a discrete noise event, integrated with respect to a 1-second time frame. The SENEL calculation is sometimes restricted to that portion of a noise event when sound levels exceed some particular threshold level. In other cases, the calculations are restricted to that portion of the noise event when sound levels are within 10 dBA of the peak sound level.

Decibel Scales for Impulse Noise

Impulse sounds are usually defined as noise events producing a significant increase in sound level but lasting less than 2 seconds (often less than 1 second). Examples of impulse noise sources include pile driving, punch presses, gunshots, fireworks, and blasting activities. Impulse noises are usually described using the sound exposure level (SEL) descriptor. The SEL measure represents the cumulative sound exposure during a particular noise event, integrated with respect to a 1-second time frame. Mathematically, SEL and SENEL descriptors are the same; the SENEL descriptor implies an A-weighted basis, while SEL descriptors often use other decibel-weighting schemes.

Figure Y-2

RELATIONSHIP BETWEEN DECIBEL CHANGES AND LOUDNESS



SOURCE: JONES & STOKES ASSOCIATES, INC.

K-7

C-065597

C-065597

The SEL measure is equivalent to the Leq value of a 1-second noise event producing the same cumulative acoustic energy as the actual noise event being analyzed. In effect, the SEL measure "spreads" or "compresses" the noise event to fit a fixed 1-second time interval. If the actual duration of the noise event is less than 1 second, the SEL value will be less than the Leq value for the event. If the duration of the noise event exceeds 1 second, the SEL value will exceed the Leq of the event.

Impulse noises of substantial magnitude (blasting, sonic booms) are often characterized using unweighted (flat) or C-weighted SEL measures. Less intense impulse noises are often characterized using an A-weighted SEL measure. As a practical matter, most SEL measurements are performed using procedures that restrict the time interval over which actual measurements or subsequent calculations are made. Most commonly, this involves defining the noise event as the period when sound levels exceed 85 dBC for daytime events or 75 dBC for nighttime events. Recent evaluations of community annoyance from military training activities have recommended against use of such thresholds (Schomer 1982).

Factors Affecting Noise Attenuation

Noise levels at different distances from a noise source are influenced by factors other than distance from the source. Topographic features and structural barriers can absorb, reflect, or scatter sound waves, resulting in lower noise levels (increased sound attenuation rates). Atmospheric conditions (wind speed and direction, humidity levels, temperatures) and the frequency characteristics of the sound itself also affect sound attenuation rates.

The atmosphere absorbs some of the energy content of sound waves, thus increasing sound attenuation rates over large distances. Such atmospheric absorption is greatest for high frequency components of a sound, resulting in a lower pitch to the sound at greater distances. Atmospheric absorption is also dependent on temperature and humidity conditions, with a complex relationship among temperature, humidity, and frequency components of the sound.

Humidity effects are most significant for higher sound frequencies and cool temperatures. For each frequency range, there is a relative humidity at which maximum atmospheric absorption occurs. Atmospheric absorption is less at higher and lower relative humidities. At any temperature, maximum atmospheric absorption occurs at lower relative humidities for low frequency sounds and at higher relative humidities for high frequency sounds. At warm temperatures, maximum atmospheric absorption occurs at low humidities for all sound frequencies.

Temperature effects on atmospheric absorption are greatest at low humidities, but are generally less significant than humidity effects. Generally, there is a temperature at which maximum atmospheric absorption occurs; absorption is less at both higher and lower temperatures. Maximum absorption occurs at low temperatures for low frequencies and at higher

temperatures for high frequencies. At high relative humidities, atmospheric absorption is greatest at low temperatures for all sound frequencies.

Overall, atmospheric absorption is greatest for high frequency sounds under conditions of low relative humidities and moderately cool temperatures. Atmospheric absorption is least for low frequency sounds at high relative humidities and warm temperatures.

Echoes off topographic features or buildings can sometimes result in higher sound levels (lower sound attenuation rates) than expected. Temperature inversion and altitudinal changes in wind conditions can at times diffract and "focus" sound waves to a location at considerable distance from the noise source. In such situations, the vertical changes in atmospheric conditions affect sound waves similar to the way lenses and prisms can bend and focus light rays. Focusing effects are usually noticeable only for very intense noise sources such as blasting operations.

Mathematical Formulas For Working With Decibels

Adding Decibels

$$\text{Cumulative dB} = 10 \cdot \text{LOG}(10\text{EXP}(0.1 \cdot \text{dB1}) + 10\text{EXP}(0.1 \cdot \text{dB2}) + \dots + 10\text{EXP}(0.1 \cdot \text{dBn}))$$

Where: * = multiplication

LOG = logarithm, base 10

EXP = power function (i.e., $10\text{EXP}(0.1 \cdot \text{dB1}) = 10$ to the $0.1 \cdot \text{dB1}$ power)

dB1, dB2, ..., dBn = individual decibel levels being added together

Example: $63 \text{ dB} + 72 \text{ dB} + 58 \text{ dB} + 60.5 \text{ dB} = 10 \cdot \text{LOG}(10\text{EXP}6.3 + 10\text{EXP}7.2 + 10\text{EXP}5.8 + 10\text{EXP}6.05) = 72.9 \text{ dB}$

Percent Change in Loudness

$$\begin{aligned} \% \text{ Change} &= (2\text{EXP}(0.1 \cdot (\text{dB2} - \text{dB1})) - 1) \cdot 100 \\ &= (2\text{EXP}(0.1 \cdot (\text{dB change})) - 1) \cdot 100 \end{aligned}$$

Where: * = multiplication

EXP = power function (i.e., $2\text{EXP}3.5 = 2$ to the 3.5 power)

dB1 = initial dBA level

dB2 = final dBA level

Example: Change from 63 dBA to 67 dBA = +31.95%

Example: Change from 67 dBA to 63 dBA = -24.21%

Example: Change of +7.5 dBA = +68.18%

Example: Change of -3.2 dBA = -19.89%

Calculation of Leq From Sample Measurements

$$\text{Leq}(T) = 10 \cdot \text{LOG} \left(\left(\frac{1}{\text{SUM}(t_1+t_2+t_3+\dots+t_n)} \right) \cdot \left(t_1 \cdot (10^{\text{EXP}(0.1 \cdot \text{dB}_1)}) + t_2 \cdot (10^{\text{EXP}(0.1 \cdot \text{dB}_2)}) + \dots + t_n \cdot (10^{\text{EXP}(0.1 \cdot \text{dB}_n)}) \right) \right)$$

Where: * = multiplication

/ = division

T = total time interval involved;

= SUM($t_1+t_2+t_3+\dots+t_n$)

LOG = logarithm, base 10

EXP = power function (i.e., $10^{\text{EXP}(0.1 \cdot \text{dB}_1)}$ = 10 to the $0.1 \cdot \text{dB}_1$ power)

$\text{dB}_1, \text{dB}_2, \dots, \text{dB}_n$ = individual decibel level data

$t_1, t_2, t_3, \dots, t_n$ = time interval durations represented by the respective decibel levels dB_1, dB_2 , etc.

Example: Calculate a 12-minute Leq based on the following dBA measurements made at the indicated time intervals:

dBA	Clock Time (seconds)	dBA	Clock Time (seconds)
53	5	60	375
56	35	59	435
59	80	57	465
61	115	54	505
60	155	58	545
57	205	62	595
63	250	67	630
59	295	65	670
61	325	61	700
64	345	57	720

Leq(720 seconds) = 61.0 dB

Note: Assume each dBA measurement represents average dBA level during preceeding time interval; length of time intervals calculated by subtracting current clock time from previous clock time.

Calculation of SEL (SENEL) from Sample Measurements

$$\text{SEL} = 10 \cdot \text{LOG} \left(\left(\text{SUM}(t_1+t_2+t_3+\dots+t_n) \right) \cdot \left(t_1 \cdot (10^{\text{EXP}(0.1 \cdot \text{dB}_1)}) + t_2 \cdot (10^{\text{EXP}(0.1 \cdot \text{dB}_2)}) + \dots + t_n \cdot (10^{\text{EXP}(0.1 \cdot \text{dB}_n)}) \right) \right)$$

Where: * = multiplication

LOG = logarithm, base 10

EXP = power function (i.e., $10^{\text{EXP}(0.1 \cdot \text{dB}_1)}$ = 10 to the $0.1 \cdot \text{dB}_1$ power)

$\text{dB}_1, \text{dB}_2, \dots, \text{dB}_n$ = individual decibel level data for the event (screened for any threshold criteria)

$t_1, t_2, t_3, \dots, t_n$ = time interval durations IN SECONDS
represented by the respective decibel levels dB1, dB2,
etc.

Example: Use data from Leq example, assuming Clock Time is in thousandths of a second (i.e., total time = 0.72 seconds); no threshold screening of data.

SEL = 58.25 dB

Example: Use data from Leq example, assuming Clock Time is in hundredths of a second (i.e., total time = 7.2 seconds); no threshold screening of data.

SEL = 78.25 dB

Calculation of Ldn

$$Ldn = 10 * \text{LOG}((1/24) * (15 * (10^{\text{EXP}(0.1 * Ld)}) + 9 * (10^{\text{EXP}(0.1 * (Ln + 10))})))$$

Where: * = multiplication

/ = division

LOG = logarithm, base 10

EXP = power function (i.e., $10^{\text{EXP}(0.1 * \text{dB1})}$ = 10 to the 0.1 * dB1 power)

Ld = Leq for the 15-hour daytime period (7 a.m. to 10 p.m.)

Ln = Leq for the 9-hour nighttime period (10 p.m. to 7 a.m.)

Example: Ld = 63 dB; Ln = 51.5 dB

Ldn = 62.5 dB

Calculation of CNEL

$$\text{CNEL} = 10 * \text{LOG}((1/24) * (12 * (10^{\text{EXP}(0.1 * Ld)}) + 3 * (10^{\text{EXP}(0.1 * (Le + 5))}) + 9 * (10^{\text{EXP}(0.1 * (Ln + 10))})))$$

Where: * = multiplication

/ = division

LOG = logarithm, base 10

EXP = power function (i.e., $10^{\text{EXP}(0.1 * \text{dB1})}$ = 10 to the 0.1 * dB1 power)

Ld = Leq for the 12-hour daytime period (7 a.m. to 7 p.m.)

Le = Leq for the 3-hour evening period (7 p.m. to 10 p.m.)

Ln = Leq for the 9-hour nighttime period (10 p.m. to 7 a.m.)

Example: Ld = 63 dB; Le = 63 dB; Ln = 51.5 dB

CNEL = 63.6 dB

Note: This is the CNEL equivalent of the preceding Ldn example.

Distance Attenuation Calculations

Drop-off rate coefficient (a) = $(1/3) \times (\text{dB drop-off rate per doubling of distance})$

i.e., a = 1.0 for 3.0 dB drop-off rate (line source, no ground absorption)
= 1.5 for 4.5 dB drop-off rate (line source, ground absorption)
= 2.0 for 6.0 dB drop-off rate (point source, no atmospheric absorption)

Calculating dB level at different distances from a source given a known dB level for a known distance:

$$\text{dB2} = \text{dB1} - 10 \times a \times \text{LOG}(\text{R2}/\text{R1})$$

Where: * = multiplication

/ = division

LOG = logarithm, base 10

a = dB drop-off rate coefficient

dB1 = dB level at known distance from source, R1

dB2 = dB level at another distance from source, R2

R1 = known distance from source for known decibel level dB1

R2 = second distance from source for which noise level estimate (dB2) is desired

Example: Given a noise level of 67.8 dBA at 175 feet from the centerline of a roadway, estimate the noise level at 400 feet from the roadway centerline assuming open landscaped terrain (i.e., ground absorption situation).

$$\text{dB2} = 62.4 \text{ dBA}$$

$$a = 1.5 = 4.5 \text{ dB drop-off rate}$$

Example: Same situation as above, except paved area terrain (no ground absorption).

$$\text{dB2} = 64.2 \text{ dBA}$$

$$a = 1.0 = 3.0 \text{ dB drop-off rate}$$

Calculating distance to a specific dB level given a known dB level at a known distance from the source:

$$\text{R2} = \text{R1} \times (10^{\text{EXP}((\text{dB1} - \text{dB2}) / (10 \times a))})$$

Where: * = multiplication

/ = division

LOG = logarithm, base 10

EXP = power function (i.e., $10^{\text{EXP}(0.1 \times \text{dB1})} = 10$ to the $0.1 \times \text{dB1}$ power)

a = dB drop-off rate coefficient

dB1 = dB level at known distance from source, R1
 dB2 = specific dB level for which a distance estimate
 (R2) is desired
 R1 = known distance from source for known decibel level
 dB1
 R2 = distance from source at which specific dB level
 (dB2) is expected to occur

Example: Given a noise level of 67.8 dBA at 175 feet from the centerline of a roadway, calculate the expected distance at which the noise level will be 60 dBA assuming open landscaped terrain.

R2 = 579.5 feet
 a = 1.5 = 4.5 dB drop-off rate

Example: Same situation as above, except paved area terrain.

R2 = 1,054.5 feet
 a = 1.0 = 3.0 dB drop-off rate

Calculating site-specific drop-off rate coefficient from dB measurements at different distances from a noise source:

$$a = (dB1 - dB2) / (10 * \log(R2/R1))$$

Where: * = multiplication

/ = division

LOG = logarithm, base 10

a = dB drop-off rate coefficient

dB1 = dB level at known distance R1 from source

dB2 = dB level at known distance R2 from source

R1 = known distance from source for known decibel level dB1

R2 = known distance from source for known decibel level dB2

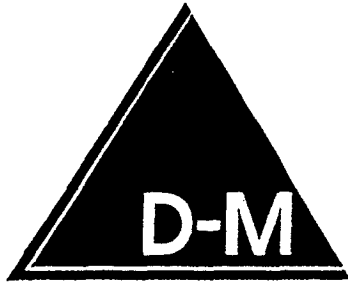
Example: Calculate a site-specific drop-off coefficient given noise levels of 73.5 dBA at 62 feet and 60.3 dBA at 265 feet.

a = 2.1
 dB drop-off rate = 2.1 * 3 = 6.3 dB per doubling of distance

K-14

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C-065604



GAP NOTED

Appendix L

NOTICE OF PREPARATION/EXPANDED INITIAL STUDY
COMMENTS

L-1

C - 0 6 5 6 0 6

C-065606

MEMORANDUM

RECEIVED

MAR 24 1988

CITY OF STOCKTON
COMMUNITY DEVELOPMENT DEPT.
PLANNING DIVISION

March 24, 1988

TO: John Carlson, Director of Community Development
FROM: Harry W. Montgomery, Director of Public Works
SUBJECT: COMMENTS ON THE NOTICE OF PREPARATION
OF AN ENVIRONMENTAL IMPACT REPORT
(EIR-2-88) GRUPE BROOKSIDE PROJECT

Public Works staff reviewed the subject document. Based on our review, the following additions and comments should be included in the Draft Environmental Impact Report:

GENERAL SERVICES DIVISION COMMENTS

1. The traffic analysis should include capacity analysis of primary circulation links within the study area as well as freeway links.

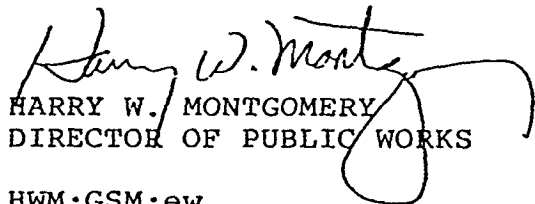
ENGINEERING DIVISION COMMENTS

1. P. E-5, top of the page, add the following: "A registered professional engineer's certification of data submitted."
2. P. E-13, Groundwater Recharge: The water demand will require increased pumping from new wells. Thus, development will directly affect groundwater availability and quality.
3. P. M-9, Mitigation Measures: It is unclear what is meant by: "Construct an 18-inch March Lane intertie..." Also, the DEIR should discuss which improvements will be constructed or paid for by the developer. Paying a fair share of the water system improvements does not mitigate the impacts. What would happen if the payment was not sufficient to construct the improvements? The DEIR should discuss how the improvements will be constructed and if they are not constructed, will development be permitted?
4. P. M-12, Mitigation Measures: Paying a fair share of the sanitary sewer system improvements does not mitigate the impacts. What would happen if the payment was not sufficient to construct the improvements? The DEIR should discuss how the improvements will be constructed and if they are not constructed, will development be permitted?

John Carlson
March 24, 1988
Page 2

COMMENTS ON THE NOTICE OF PREPARATION OF AN ENVIRONMENTAL IMPACT
REPORT (EIR-2-88) GRUPE BROOKSIDE PROJECT

We appreciate the opportunity to comment on this Notice of Preparation and to have our comments incorporated Draft EIR.


HARRY W. MONTGOMERY
DIRECTOR OF PUBLIC WORKS

HWM:GSM:ew

cc: City Engineer



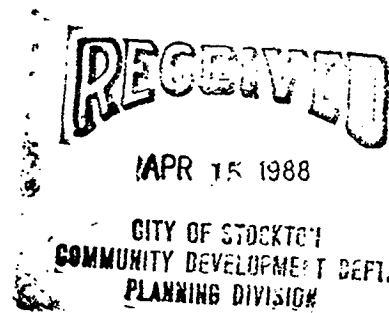
DEPARTMENT OF THE ARMY
SACRAMENTO DISTRICT, CORPS OF ENGINEERS
650 CAPITOL MALL
SACRAMENTO, CALIFORNIA 95814

REPLY TO
ATTENTION OF

April 11, 1988

San Joaquin Basin Branch

Mr. Michael M. Niblock, Associate Planner
City of Stockton
Community Development Department
6 East Lindsay Street
Stockton, California 95202



Dear Mr. Niblock:

This is in reply to your February 25, 1988, letter requesting comments on the Notice of Preparation of a Draft Environmental Impact report (DEIR) for the Brookside Community Project, EIR 2-88, a planned community development located west of Interstate 5 between Fourteenmile Slough and the Calaveras River in Stockton, California.

We have reviewed the DEIR and note that the document covers existing flood hazards and our Federal regulatory permit requirements in sufficient detail. On pages E-2 and E-3 of the Hydrology Section, in paragraph title Flooding, the report states that FEMA estimates that a 100-year flood would inundate the Brookside property to a depth of approximately 7 feet, and shows a Zone A flooding elevation - 7 feet on "Figure E-1, Flood Hazard Levels". It should be indicated that the actual, 100-year flood water surface elevation for this site is 7.4 feet, National Geodetic Vertical Datum.

Thank you for the opportunity to contribute to the preparation of the DEIR.

Sincerely,

Daryl Talladay
for Walter Yep
Chief, Planning Division

L-6

C - 0 6 5 6 0 9

C-065609

DEPARTMENT OF BOATING AND WATERWAYS

1629 S STREET

ACRAMENTO, CA 95814-7291

16) 445-6281

FILE



March 31, 1988

RECEIVED

APR 4 1988

CITY OF STOCKTON
DEVELOPMENT DEPT.
CIVIL ENGINEERING

Mr. Michael Niblock
The City of Stockton
6 East Lindsay Street
Stockton, CA 95202

Dear Mr. Niblock:

SCH#88022316: Brookside Community Project

The Department of Boating and Waterways is not a regulatory agency and does not issue any permits. However, we do review and may comment upon U. S. Corps of Engineer public notices for proposed projects and environmental documents which are submitted to us by the State Clearinghouse. For review purposes, the Department's interests lie in the following areas:

1. Potential for Navigation Hazards - To what extent might the proposed project affect safe navigation in California's waterways?
2. Beach erosion - Will the project affect the stability of coastal or bay beaches? Flood control projects, including dams and reservoirs, can have an impact on the transport of sand from rivers to coastal beaches. All coastal projects that intrude into the ocean are analyzed by Department coastal engineers.
3. Boating and Boating Facilities - To what extent might the proposed project affect existing or planned small craft harbors or launching facilities? To what extent might recreational boating activities be affected?
4. Public Trust - Placement of permanent residences or other facilities that would not be open to the public is analyzed by the Department in regard to public trust. The public trust doctrine holds that public lands and waterways are to be used for public benefit.

If you have further questions, please contact Barbara Kierbow at (916) 445-6281.

Sincerely,

WILLIAM H. IVERS
Director

cc: State Clearinghouse

L-7

C - 0 6 5 6 1 0

C-065610

MEMORANDUM

March 25, 1988

To: Mike Niblock, Associate Planner

From: Gunter Konold, Administrative Assistant

Subject: NOTICE OF PREPARATION -
BROOKSIDE COMMUNITY PROJECT (EIR 2-88)

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MAR 25 1988
CITY OF STOCKTON
COMMUNITY DEVELOPMENT DEPT.
PLANNING DIVISION

1. In view of the California Court of Appeals decision in the matter of the Resource Defense Fund vs. Local Agency Formation Commission of Santa Cruz County, the "Partial Annexation Alternative" with appropriate findings needs to be addressed.
2. Maps have to delineate the annexation boundary, which is different than the currently noted project boundary. The annexation line at the north and south ends of the project has to coincide with the current City limits line, which is NOT the south line of Fourteen Mile Slough and the north line of the Calaveras River. This may require recalculating the square feet of area under consideration to state the proper size of the annexation proposal.


GUNTER KONOLD

RECEIVED

MAR 14 1988

March 10, 1988

CITY OF STOCKTON
COMMUNITY DEVELOPMENT DEPARTMENT
PLANNING DIVISION

Mr. Michael Niblock
City of Stockton
Community Development Department
City Hall
Stockton, CA 95202-1997

RE: EIR File 2.88 - Brookside Community Project

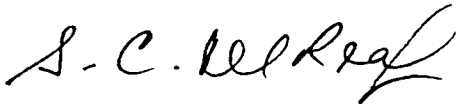
Dear Mr. Niblock:

Pacific Bell will serve this development within the parameters of our Long Range Outside Plant Plans. We may require some "PUE's" (Public Utility Easements) and private property rights of way as we review specific subdivision or development plans. For permanent serving arrangements, Pacific Bell will extend our major conduit structure West on March Lane. This will require crossing to Smith Levee into the Brookside Community Project. Should there be a bridge structure at Smith Levee, Pacific Bell would require space for its conduits.

If you have any questions, please call me on 916-972-6121.

Thank you.

Sincerely,



S. C. Del Real
Public Works Coordinator

SDR:mc:sb

cc: Mr. Lee Fitzgerald



STOCKTON EAST WATER DISTRICT

6767 EAST MAIN STREET

P.O. BOX 5157

STOCKTON, CA 95205-0157

209/948-0333

March 24, 1988

Mr. John Carlson, Director
Community Development Department
City of Stockton - City Hall
Stockton, CA 95202

Subject: Environmental Review - EIR #2-88 - Brookside Community Project

Dear Mr. Carlson:

I am writing to comment on the subject project draft EIR.

The discussion on water should include the following statements:

- The State of California has determined the City of Stockton and surrounding agricultural groundwater basin to be critically overdrafted.
- SEWD was created in 1971 by the State Legislature upon the finding that, "The water supplies in the underground basin in the area of the SEWD are insufficient to meet the water demands of the area, and, because of the geologic conditions peculiar to the area and because excessive pumping has seriously depleted the underground water storage, there has been an intrusion of saline waters into the underground water basin causing serious water quality deterioration and the destruction of the usefulness of a portion of the underground water basin. Further excessive pumping, without proper management of the underground water basin and the provision of supplemental water supplies is certain to destroy the usefulness of a major portion of the underground water basin and endanger the health and welfare of the district".
- In 1978, SEWD began providing a nominal 20,000 acre feet annually of treated surface water for urban area use.
- The average annual overdraft of the Eastern San Joaquin County groundwater basin was determined to be approximately 70,000 acre feet in 1985. (Report by Brown & Caldwell, consulting engineers). The annual overdraft is projected to be at least 200,000 acre feet by the year 2020 if no additional surface water is obtained, and saline water is projected to intrude further east, under the western portion of the current urban area.

L-10

C - 0 6 5 6 1 3

DIRECTORS

VIC SOLARI, JR.
JOSEPH L. DONDERO
JACK H. TONE
JACK LAVEN
RICHARD L. BOZZANO
BETTY L. MacNEAR
ROGER M. HUCKINS

EDWARD M. STEFFANI
GENERAL MANAGER

JOHN W. STOVALL
GENERAL COUNSEL

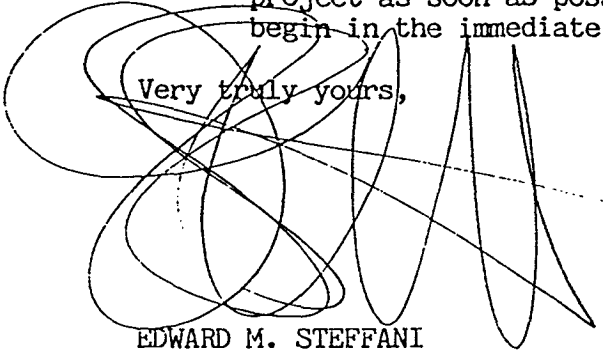
RECEIVED
MAY 24 1988
CITY OF STOCKTON
COMMUNITY DEVELOPMENT DEPT.

C-065613

- . Although development of agricultural land for urban purposes does not generally increase water demands (one acre of land uses 3+ AFA whether farmed or developed for medium density residential purposes), substantial areas proposed for development have been using surface water not available for urban use. Some agricultural areas are and have been irrigated with delta water, or water from Woodbridge Irrigation District. Development of such areas will further impact the groundwater basin.
- . Continued growth without supplemental surface water will increase the 70,000+ AFA overdraft by an unknown amount. It is probably safe to say that the increase will be on the order of 20,000+ AFA.
- . SEWD has been working to obtain a supplemental supply of surface water. The District contracted with the USBR in December 1983 for 75,000 AFA of New Melones water, and has been attempting since then to construct the 40+ mile conveyance system needed to bring the water to Stockton.
- . The District adopted a plan for conveyance in late 1986, determined financial feasibility and contracted for design in mid 1987. The system, known as the Lower Farmington Canal-Littlejohns Creek project was estimated to cost \$17 million. Feasibility studies showed that this cost could be met without increasing the wholesale cost of treated water above the current \$140 per AF and by increasing the irrigation water price from \$9.12 to \$15 per AF.
- . Littlejohns Creek area owners' opposition to the project appeared at the time of the draft EIR, in October 1987. It now appears that those owners are prepared to litigate the final EIR. Such litigation could delay the project indefinitely.
- . In order that supplemental water may be available to correct the overdraft soon, the District has proposed alternative projects which avoid Littlejohns Creek. However, the alternatives will have a greater cost; \$9 million to \$17 million are presently estimated. If the project cost increases, SEWD will need outside assistance if the costs of treated and irrigation water are not to exceed \$140 and \$15 per acre foot, respectively.
- . The SEWD and CSJWCD Boards favor a gravity supply system, and needs therefore financial assistance of approximately \$13 million.
- . Alternatives for funding include: 1) an advance from the state to be repaid by State Water Contractors if and when SEWD, CSJWCD, the State Department of Water Resources and the State Water Contractors agree on state participation in a local water storage project which would make some of SEWD and CSJWCD New Melones supply available for State Water Contractors use; 2) increase in the price of treated water; 3) participation by the County of San Joaquin, California Water Service, or City of Stockton; or 4) combinations of the above.

- . SEWD proposes that the urban water contractors, the Stockton City Council, the Board of Supervisors, and all of the urban and agriculture district users work together to find a way to finance the needed conveyance system as soon as possible. The potential for another dry year dictates the need to complete the conveyance project as soon as possible. This means that construction must begin in the immediate future.

Very truly yours,



EDWARD M. STEFFANI
General Manager

*jh

cc: City Council Members
City Manager

RECEIVED

MAR 25 1988

MEMORANDUM

March 24, 1988

CITY OF STOCKTON
COMMUNITY DEVELOPMENT DEPT.
PLANNING DIVISION

TO: John Carlson, Director of Community Development
Attn: Mike Niblock

FROM: Emil Seifert, Director of Parks and Recreation

SUBJECT: NOTICE OF PREPARATION/EXPANDED INITIAL STUDY FOR
BROOKSIDE COMMUNITY PROJECT

Thank you for the opportunity to review the subject draft document. The Parks and Recreation Department staff offers the following comments:

1. Page M-25, Existing Facilities in the Project Vicinity:

The second sentence should be reworded to indicate the 53.3 acre Buckley Cove Park/Marina includes an approximate 5 acre area devoted to passive recreational uses of picnicking, fishing, and a tot lot play area. The balance of this site, approximately 47 acres, is devoted to boat launching, parking and marina uses.

2. Page M-26, City Park Planning Objectives:

The Calaveras River levee proposed bikeways plan has been implemented in stages by the City Council through the C.I.P. annually since 1983 and the bikeway is currently constructed on the north levee of the river from east of El Dorado Street to west of I-5 Freeway at Feather River Drive. The path does not currently extend west to this area as this was county area.

3. Page M-26, City Parks Fees:

Based on the current RHA study, these fees should be almost doubled to cover the entire cost of purchase of land, construction of park, and also, the construction of a recreation center within the north Stockton area.

4. Page M-27, Impact: Increased Demand for Facilities and Services:

Please add that the logical location for a second neighborhood park would be adjacent to the proposed elementary school site at the southeast corner of the project site.

5. Page M-27, Impact: Financing Necessary Capital Improvements and Services:

The first sentence should be expanded to indicate, following...are ultimately expected, based on the adaption of the proposed park fees indicated in the RHA study,

6. Page M-28, Impact: Inconsistency with Bikeway Plan:

Please clarify the last sentence of the first paragraph. Although this plan has not been totally approved by the City Council, it has been implemented in stages by the City Council through the C.I.P. annually since 1983. The path does not currently extend west into this project area since it was previously county area.

7. Page M-28, Mitigation Measure:

Add: Comply with City of Stockton Calaveras River Bikeway Plan.

8. Page M-25:

The EBMUD right-of-way is mentioned as an existing facility in the project vicinity, but needs to be discussed in the City park planning objectives with impacts and mitigation measures.

9. Page G-18, Parks and Recreation:

Item 1-1 Assessment of Consistency: Potentially inconsistent should be changed to inconsistent.

10. Page G-18, Parks and Recreation:

Item 1-8 Assessment of Consistency: Staff is in disagreement with statement "difficult to determine." This should be changed to inconsistent.


11. Page G-18, Parks and Recreation:

Item 1-9 Assessment of Consistency: This should be "inconsistent." Staff is in disagreement that the bikeway shown on the site plan meets the goals and policies of the City. The proposed project is very inconsistent with the City policy for development of bike paths on EBMUD right-of-way and the Calaveras River levee.

12. Page B-1, Significant Unavoidable and/or Unresolved Impacts:

The sentence says "two" significant impacts, but five are listed.

Thank you for the opportunity to review this environmental document. If you have any questions on this, please contact me at 944-8373.



EMIL SEIFERT, DIRECTOR
PARKS AND RECREATION

ES:bac

cc: Larry Nordstrom

PS: The City is currently developing standards for community center facilities in conjunction with the revised General Plan. A community recreation center building may be needed in this project area.

U.S. Department
of Transportation
**United States
Coast Guard**



Commander
Eleventh Coast Guard District

Building 10, Rm 214
Coast Guard Island
Alameda, CA 94501-5100
Staff Symbol: (oan)
(415) 437-3514

16591
Calaveras Riv. Genl.
Fourteen Mile Sl. Genl.
3 March 1988

Mr. Mike M. Niblock, Associate Planner
City of Stockton
Community Development Department
Planning Division
6 East Lindsay Street
Stockton, California 95202

Dear Mr. Niblock

Thank you for the opportunity to review the Notice of Preparation/Expanded Initial Study for the BROOKSIDE COMMUNITY PROJECT.

Mitigation measures suggested for traffic include bridges across Fourteen Mile Slough and the Calaveras River. The bridges would require Coast Guard Bridge Permits.

We recommend that you address provision of marine sanitation pumpout facilities and oily waste disposal facilities at the marina in the Environmental Impact Report. The Federal Water Pollution Control Act prohibits the discharge of untreated vessel sewage or oil or hazardous substances into the waters of the United States. While that Act does not require the installation of equipment to handle vessel sewage or bilge and waste oils at marinas, the Coast Guard recommends such installation at new or expanded facilities. The penalty for discharge of vessel sewage or oil or oily waste is a fine of up to \$5,000 for each offense. Therefore it would be to the benefit of applicants and prospective tenants to incorporate pumpout and oil waste reception facilities in the marina plans. If you want additional information on pumpout facilities, please call LCDR Robert Varanko, USCG at (213) 944-5330.

Sincerely,

W. R. TILL

Chief, Bridge Section North
By direction of the District Commander

Copy to: CCGD11(oan)
CCGD11 (mep)

L-16

C - 0 6 5 6 1 9

C-065619

MEMORANDUM

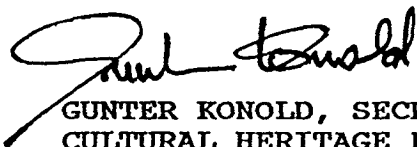
March 25, 1988

TO: Mike Niblock, Associate Planner
Planning Division

FROM: Gunter Konold, Secretary
Cultural Heritage Board

SUBJECT: NOTICE OF PREPARATION--
BROOKSIDE COMMUNITY PROJECT (EIR 2-88)

Thank you for the opportunity to review the above captioned environmental document. Please be advised that there are no designated historic landmarks located in the subject area. The possibility of archaeological matter should be considered during the implementation stage and any finds evaluated by a qualified archaeologist. Efforts should also be made to preserve Valley Oak trees that may be affected by construction activity.



GUNTER KONOLD, SECRETARY
CULTURAL HERITAGE BOARD

GK:ble

cc: Cultural Heritage Board

L-17

C - 0 6 5 6 2 0

C-065620

MEMORANDUM

March 25, 1988

RECEIVED

MAR 25 1988

CITY OF STOCKTON
COMMUNITY DEVELOPMENT DEPT.
PLANNING DIVISION

To: Mike Niblock, Associate Planner

From: Gunter Konold, Administrative Assistant

Subject: NOTICE OF PREPARATION -
BROOKSIDE COMMUNITY PROJECT (EIR 2-88)

1. In view of the California Court of Appeals decision in the matter of the Resource Defense Fund vs. Local Agency Formation Commission of Santa Cruz County, the "Partial Annexation Alternative" with appropriate findings needs to be addressed.
2. Maps have to delineate the annexation boundary, which is different than the currently noted project boundary. The annexation line at the north and south ends of the project has to coincide with the current City limits line, which is NOT the south line of Fourteen Mile Slough and the north line of the Calaveras River. This may require recalculating the square feet of area under consideration to state the proper size of the annexation proposal.



GUNTER KONOLD

L-18

C - 0 6 5 6 2 1

C-065621



1860 EAST HAZELTON AVENUE
STOCKTON, CALIFORNIA 95205
TELEPHONE (209) 944-2233

SAN JOAQUIN COUNTY COUNCIL OF GOVERNMENTS

March 24, 1988

Mr. Michael Niblock
Community Development
City of Stockton
6 East Lindsay Street
Stockton, CA 95202

Dear Mr. Niblock:

The San Joaquin County Council of Governments has completed its review of the Brookside Community Project, Notice of Preparation. COG staff offers the following comments concerning the transportation and air quality impacts of this development.

The proposed Brookside development is a very large project which will have significant impacts on the traffic system throughout Stockton. Of particular concern to the Council of Governments are the impacts on the March Lane I-5 interchange, impacts to the mainline of Interstate 5, increased congestion on March Lane itself, and the lack of adequate north - south access in the entire area west of Interstate 5.

As is mentioned in the Notice of Preparation, the Draft Environmental Impact Report will have to address impacts to March Lane and the March/I-5 interchange in detail. Widening of March Lane and improvements to the interchange structure should both be examined. Improvements to the interchanges are currently listed in the County Regional Transportation Plan as a high priority project for 1990. Improvements to the March Lane and Hammer Lane interchanges are also discussed in the 1988 Regional Transportation Improvement Program. These improvements are listed as projects which should be considered first if additional transportation funds become available in the future. Along with the need for future improvements and the type of improvements necessary, the DEIR should also discuss alternative funding mechanisms for these improvements.

The DEIR should discuss in detail the impacts which this, and other projects in the area, will have on the mainline of interstate 5. Caltrans has determined that I-5 south of Hammer Lane will need to be widened to a uniform eight lanes to handle future traffic demand, and maintain acceptable levels of service. The Draft EIR should address these needs and analyze specifically what share of future traffic will be attributable to this development. The cumulative affects are particularly important, given the number of projects which are currently in various stages of development in this area.

L-19

• COUNTY OF SAN JOAQUIN • CITIES OF STOCKTON, LODI, TRACY, MANTECA, ESCALON, RIPON •

C - 0 6 5 6 2 2

RECEIVED

MAR 25 1988

CITY OF STOCKTON
COMMUNITY DEVELOPMENT DEPT.
PLANNING DIVISION

RECEIVED

MAR 25 1988

CITY OF STOCKTON
COMMUNITY DEVELOPMENT DEPT.
PLANNING DIVISION

C-065622

Mr. Niblock
3-24-83
Page 2

Associated with the problem of congestion on Interstate 5 is the need to develop alternative north - south connectors west of the freeway. A key contributor to increased traffic on I-5 is the fact that this is the only major north - south connector in west Stockton. The Draft EIR should explore alternative means of moving traffic north and south, west of I-5. This should include discussion of the proposed "western beltway". Cumulative traffic projections indicate that additional north - south connectors are needed. The discussion should also include how any north - south roadway would interact with other development proposed for this area.

The Notice of Preparation briefly mentions the use of trip reduction measures as a means of reducing congestion. There are many alternatives which could be applied to this development which would both reduce trips and auto emissions. The Draft EIR should address trip reduction measures relating to both residential and employment areas. The Council of Governments is currently working on a trip reduction ordinance for San Joaquin County and would be available to discuss this with the project sponsors at some time in the future.

The Council of Governments appreciates the opportunity to comment on this Notice of Preparation and looks forward to seeing the Draft Environmental Impact Report. If you have any questions or comments, please call.

Sincerely,


Douglas Reed
Planner

cc: Terry Barrie, Caltrans District 10

DEPARTMENT OF FOOD AND AGRICULTURE



1220 N Street
P.O. 942871
Sacramento, CA 94271-0001

March 17, 1988

RECEIVED

MAR 21 1988

CITY OF STOCKTON
COMMUNITY DEVELOPMENT DEPT.
PLANNING DIVISION

Mr. Michael Niblock
The City of Stockton
6 East Lindsay Street
Stockton, CA 95202

Dear Mr. Niblock:

Thank you for the opportunity to comment on the forthcoming Draft Environmental Impact Report (DEIR) for the 1,186 acre Brookside Community Project, EIR 2-88 (SCH No. 88022316).

The California Department of Food and Agriculture (CDFA) is concerned about the loss of agricultural land, especially prime land, to urban use. We appreciate the thorough discussion of the issues to covered in the DEIR.

The Expanded Initial Study notes that no mitigation measures exist for the conversion of prime agricultural land. The CDFA would like the DEIR to discuss possible mitigation measures for this loss. These could include directing growth towards non-prime soils, selecting alternative sites for development, encouraging clustered development, additional use of the Williamson Act, the creation of buffers between agricultural and non-agricultural areas, the establishment of land trusts, and the purchase and transfer of development rights.

The CDFA supports the right of local agencies to develop and implement land-use policy in its area of influence, but also wants to assure that agricultural land is not prematurely and irreversibly lost due to development which is not accurately assessed for environmental impact.

Sincerely,

Martha Neuman
Research Assistant
Agricultural Resources Branch
(916) 322-5227

cc: Loreen McMahon

L-21

C - 0 6 5 6 2 4

C-065624

THE RECLAMATION BOARD

1416 Ninth Street, Room 455-6
Sacramento, CA 95814
(916) 445-9454

**RECEIVED**

MAY 23 1988

CITY OF STOCKTON
COMMUNITY DEVELOPMENT DEPT.
PLANNING DIVISION

MAR 22 1988

Mr. Michael M. Niblock
Associate Planner
Community Development Department
City of Stockton
6 East Lindsay Street
Stockton, CA 95202

Dear Mr. Niblock:

Staff for The Reclamation Board has reviewed the Expanded Initial Study and the Notice of Preparation (NOP) of a Draft Environmental Impact Report (DEIR) for the Brookside Community Project (EIR 2-88) and has the following comments.

The Calaveras River is under the Board's jurisdiction and all encroachments into the Calaveras River levees or floodway will require a permit from the Board before start of construction.

For more information, the project proponent should contact Mr. Edward C. Greiner, Encroachment Control Section at the above address or call (916) 324-3889.

Thank you for the opportunity to comment.

Sincerely,

A handwritten signature in dark ink, appearing to read "Raymond E. Barsch".

RAYMOND E. BARSCH
General Manager

cc: Office of Planning and Research
1400 Tenth Street, Room 101
Sacramento, CA 95814

L-22

C - 0 6 5 6 2 5

C-065625



STOCKTON EAST WATER DISTRICT

6767 EAST MAIN STREET

P.O. BOX 5157

STOCKTON, CA 95205-0157

209/948-0333

March 24, 1988

Mr. John Carlson, Director
Community Development Department
City of Stockton - City Hall
Stockton, CA 95202

Subject: Environmental Review - EIR #2-88 - Brookside Community Project

Dear Mr. Carlson:

I am writing to comment on the subject project draft EIR.

The discussion on water should include the following statements:

- . The State of California has determined the City of Stockton and surrounding agricultural groundwater basin to be critically overdrafted.
- . SEWD was created in 1971 by the State Legislature upon the finding that, "The water supplies in the underground basin in the area of the SEWD are insufficient to meet the water demands of the area, and, because of the geologic conditions peculiar to the area and because excessive pumping has seriously depleted the underground water storage, there has been an intrusion of saline waters into the underground water basin causing serious water quality deterioration and the destruction of the usefulness of a portion of the underground water basin. Further excessive pumping, without proper management of the underground water basin and the provision of supplemental water supplies is certain to destroy the usefulness of a major portion of the underground water basin and endanger the health and welfare of the district".
- . In 1978, SEWD began providing a nominal 20,000 acre feet annually of treated surface water for urban area use.
- . The average annual overdraft of the Eastern San Joaquin County groundwater basin was determined to be approximately 70,000 acre feet in 1985. (Report by Brown & Caldwell, consulting engineers). The annual overdraft is projected to be at least 200,000 acre feet by the year 2020 if no additional surface water is obtained, and saline water is projected to intrude further east, under the western portion of the current urban area.

L-23

C - 0 6 5 6 2 6

DIRECTORS

VIC SOLARI, JR.
JOSEPH L. DONDERO
JACK H. TONE
JACK LAVEN
RICHARD L. BOZZANO
BETTY L. MacNEAR
ROGER M. HUCKINS

EDWARD M. STEFFANI
GENERAL MANAGER

JOHN W. STOVALL
GENERAL COUNSEL

REC-11

COMMUNITY DEVELOPMENT DEPT.

- . Although development of agricultural land for urban purposes does not generally increase water demands (one acre of land uses 3+ AFA whether farmed or developed for medium density residential purposes), substantial areas proposed for development have been using surface water not available for urban use. Some agricultural areas are and have been irrigated with delta water, or water from Woodbridge Irrigation District. Development of such areas will further impact the groundwater basin.
- . Continued growth without supplemental surface water will increase the 70,000+ AFA overdraft by an unknown amount. It is probably safe to say that the increase will be on the order of 20,000+ AFA.
- . SEWD has been working to obtain a supplemental supply of surface water. The District contracted with the USBR in December 1983 for 75,000 AFA of New Melones water, and has been attempting since then to construct the 40+ mile conveyance system needed to bring the water to Stockton.
- . The District adopted a plan for conveyance in late 1986, determined financial feasibility and contracted for design in mid 1987. The system, known as the Lower Farmington Canal-Littlejohns Creek project was estimated to cost \$17 million. Feasibility studies showed that this cost could be met without increasing the wholesale cost of treated water above the current \$140 per AF and by increasing the irrigation water price from \$9.12 to \$15 per AF.
- . Littlejohns Creek area owners' opposition to the project appeared at the time of the draft EIR, in October 1987. It now appears that those owners are prepared to litigate the final EIR. Such litigation could delay the project indefinitely.
- . In order that supplemental water may be available to correct the overdraft soon, the District has proposed alternative projects which avoid Littlejohns Creek. However, the alternatives will have a greater cost; \$9 million to \$17 million are presently estimated. If the project cost increases, SEWD will need outside assistance if the costs of treated and irrigation water are not to exceed \$140 and \$15 per acre foot, respectively.
- . The SEWD and CSJWCD Boards favor a gravity supply system, and needs therefore financial assistance of approximately \$13 million.
- . Alternatives for funding include: 1) an advance from the state to be repaid by State Water Contractors if and when SEWD, CSJWCD, the State Department of Water Resources and the State Water Contractors agree on state participation in a local water storage project which would make some of SEWD and CSJWCD New Melones supply available for State Water Contractors use; 2) increase in the price of treated water; 3) participation by the County of San Joaquin, California Water Service, or City of Stockton; or 4) combinations of the above.

- . SEWD proposes that the urban water contractors, the Stockton City Council, the Board of Supervisors, and all of the urban and agriculture district users work together to find a way to finance the needed conveyance system as soon as possible. The potential for another dry year dictates the need to complete the conveyance project as soon as possible. This means that construction must begin in the immediate future.

Very truly yours,



EDWARD M. STEFFANI
General Manager

*jh

cc: City Council Members
City Manager

L-25

C - 0 6 5 6 2 8

C-065628



DELTA-SIERRA GROUP
MOTHER LODE CHAPTER
SIERRA CLUB



March 23, 1988

Associate Planner Michael Niblock
Community Development Department
Planning Division, City of Stockton
6 E. Lindsay St. Stockton Ca. 95202

Dear Mr. Niblock:

The following are our comments on "Brookside Community Project" (Grupe)
EIR File #2-88.

- 1) We do agree that it is necessary to preserve and enhance marsh areas in mitigation for that lost habitat. (Section F)
- 2) We do agree that there is no mitigation possible for the loss of this important parcel of prime agricultural land.
- 3) We do not agree that an acceptable bikepath can be planned for the most heavily traveled street of this development.

In the case of some other local projects we have expressed our concerns and those concerns have been fairly addressed. In the case of this project we have expressed our concerns to the city staff and let it be known that we were seriously concerned about this one aspect of the proposal. But, in this "Notice of Preparation" it is plain that our interests, and those of the public in a continuation of the existing, safe, bicycle route west to Buckley Cove has been deliberately subverted. If there is no correction of this deficiency we will again be losing an opportunity for this community to show some class.

The proposed site plan (Figure A-3) shows a bicycle path taking a circuitous route along the most heavily traveled street in the proposed subdivision. This is not a safe place for a bike path. "These routes are only valuable to cyclists if the traffic flow is less than a maximum of about 100 vehicles per hour." (The Bicycle Planning Book". Mike Hudson, 1978, pg.88). The only safe routes for the promised bike paths would be:

- a. As a continuation of the presently planned bikeway along the Calaveras River Levee.
- b. As a completely separate (from auto traffic) route through the subdivision. (Class I)
- c. On a secondary street through the subdivision (Class II).

The discussion in section G-10 is nothing more than a confused attempt to infer that there has not been any clear plan for a bikeway from the existing terminus on the Calaveras Levee to Buckley Cove. The discussion of the possibility that the path was possibly meant for the SOUTH bank of the river is ludicrous. The City of Stockton Bicycleway Plan (1980) and the Calaveras River Bikeway Plan (1983) are clear. This "Brookside" proposal is both unclear and unsafe. A Class II or Class III route on a major street is unconscionable.

Thank you, *[Signature]*
Mr. S.K. Stocking for the Executive Committee.

RECEIVED

MEMORANDUM

MAR 24 1988

CITY OF STOCKTON
COMMUNITY DEVELOPMENT DEPT.
PLANNING DIVISION

March 24, 1988

TO: John Carlson, Director of Community Development
FROM: Harry W. Montgomery, Director of Public Works
SUBJECT: COMMENTS ON THE NOTICE OF PREPARATION
OF AN ENVIRONMENTAL IMPACT REPORT
(EIR-2-88) GRUPE BROOKSIDE PROJECT

Public Works staff reviewed the subject document. Based on our review, the following additions and comments should be included in the Draft Environmental Impact Report:

GENERAL SERVICES DIVISION COMMENTS

1. The traffic analysis should include capacity analysis of primary circulation links within the study area as well as freeway links.

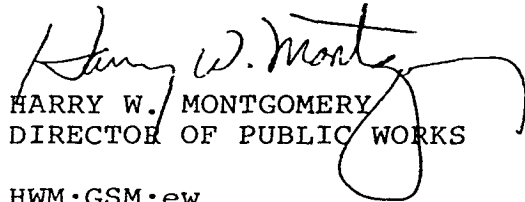
ENGINEERING DIVISION COMMENTS

1. P. E-5, top of the page, add the following: "A registered professional engineer's certification of data submitted."
2. P. E-13, Groundwater Recharge: The water demand will require increased pumping from new wells. Thus, development will directly affect groundwater availability and quality.
3. P. M-9, Mitigation Measures: It is unclear what is meant by: "Construct an 18-inch March Lane intertie..." Also, the DEIR should discuss which improvements will be constructed or paid for by the developer. Paying a fair share of the water system improvements does not mitigate the impacts. What would happen if the payment was not sufficient to construct the improvements? The DEIR should discuss how the improvements will be constructed and if they are not constructed, will development be permitted?
4. P. M-12, Mitigation Measures: Paying a fair share of the sanitary sewer system improvements does not mitigate the impacts. What would happen if the payment was not sufficient to construct the improvements? The DEIR should discuss how the improvements will be constructed and if they are not constructed, will development be permitted?

John Carlson
March 24, 1988
Page 2

COMMENTS ON THE NOTICE OF PREPARATION OF AN ENVIRONMENTAL IMPACT
REPORT (EIR-2-88) GRUPE BROOKSIDE PROJECT

We appreciate the opportunity to comment on this Notice of Preparation and to have our comments incorporated Draft EIR.


HARRY W. MONTGOMERY
DIRECTOR OF PUBLIC WORKS

HWM:GSM:ew

cc: City Engineer

LINCOLN UNIFIED SCHOOL DISTRICT
2010 WEST SWAIN ROAD • STOCKTON, CALIFORNIA 95207 • 209 / 473-5400

March 24, 1988

RECEIVED

MAR 26 1988

CITY OF STOCKTON
COMMUNITY DEVELOPMENT DEPT.
PLANNING DIVISION

Mr. Mike Niblock
Associate Planner
Community Development Department
City of Stockton
6 East Lindsay Street
Stockton, CA 95202

Dear Mike:

Re: Notice of Preparation of a Draft Environmental Impact Report

Enclosed are copies of pages from the Brookside Community Project report with suggested changes as they relate to the Lincoln Unified School District.

James Areida, Facility Planner, is the contact person for our district.

Sincerely,

James Areida

James Areida
Director
Facilities & Planning

JA:rm

Enclosure

L-29

C - 0 6 5 6 3 2

C-065632

Existing Facilities

The project is located in the south-central section of the LUSD, which includes urban areas of north Stockton and unincorporated areas of the San Joaquin Delta. A map of the district, which identifies existing school sites, is shown in Figure M-4. The LUSD currently has five conventional elementary schools (grades K-6); two expanded elementary schools (grades K-8); one high school (grades 9-12), Lincoln; one alternative high school, McCandless; and one continuation high school, Sture Larrison.

Classrooms have been added within the last 2 years to Lincoln High School and three elementary schools. The LUSD presently uses nearly 40 portable classrooms, with approximately half of these located at Lincoln High School. No LUSD schools currently operate on a year-round schedule, and no scheduling change of this kind has yet been considered.

Enrollment

Current K-12 LUSD enrollment is approximately 8,100 and has been growing at an average annual rate of 3 percent. Enrollment in 2000 is projected to be 10,220. This estimate is based primarily on buildout of the Brookside project site, as there is little remaining developable land elsewhere within LUSD boundaries.

Based on the capacity of existing facilities, the LUSD has determined that schools are currently overcrowded by approximately 1,000 and considers this number of students to be presently "unhoused." Lincoln High School has a design capacity of 1,800-2,000 and an enrollment of approximately 2,500. As a result of additions to elementary schools, overcrowding has generally not been a problem in grades K-8.

Proposed Facilities

The LUSD has obtained preliminary (Phase I) approval from the Office of Local Assistance (OLA) for one new school, which will have a capacity of 665 and house students in grades K-8. The district plans to build this school on a 14 1/2 acre site within the Brookside development, after making unsuccessful efforts to acquire a suitable site in Stockton. (omit)

Based on current facility needs and projected enrollment increases resulting from project implementation and infill development, the district expects that it will need to build one other K-8 school and one new high school. Sites for these additional schools have been identified within the Brookside project area, as shown in Figure M-4. The high school would be designed for approximately 1,600-1,800 students.

omit (The district has also applied for state funding of a 13,000-square-foot addition to Lincoln High School to alleviate current overcrowding.

School Facility Financing

Organization State Building Program. The district relies on the state (Leroy Greene) program for funding of new construction and reconstruction projects. No LUSD general fund monies are used and no additional funding sources have been considered. Eligibility for additional state funding of new school construction projects will depend on when new housing development in these areas is approved and completed. State funding restrictions and increasing competition have caused a growing number of districts to defer construction of new school facilities or seek alternative financing sources.

School Impaction Fees (AB 2926). Since March 1987, the LUSD has assessed maximum allowable fees of \$1.50 and \$.25 per square foot, respectively, on new residential and commercial or industrial development, as authorized under AB 2926. Some development is exempt, while other development is subject to lower fees under SB 201 (1978) or preexisting development fee agreements.

AB 2926, which became effective January 1, 1987, authorizes school districts to directly levy "a fee, charge, dedication, or other form of requirement" on new development, based on findings that such development contributes to a need for construction of new facilities or reconstruction of existing facilities. Maximum fee levels are to be increased annually based on inflation. Fee revenues are to be used for necessary capital improvements, and may be used to lease or acquire interim facilities such as relocatable classrooms in order to alleviate overcrowding.

Necessary and Sufficient Mitigation under AB 2926. AB 2926 stipulates that assessment of maximum allowable impaction fees or an equivalent charge, dedication or other requirement satisfies the legal requirement for mitigation of any "environmental effects related to the adequacy of school facilities when considering the approval or the establishment of conditions for the approval of a development project" under CEQA. This provision evidently precludes implementation of any mitigation measure(s) as a condition of project approval under CEQA which, singly or jointly, would exceed in value the total of maximum applicable impaction fees.

Due to this limitation, implementation of authorized fee assessments or equivalent mitigation measures under CEQA may not, in fact, reduce identified school impacts to a less-than-significant level. Other in-kind or in-lieu

Impact: Cost of Necessary Capital Improvements

New construction. The LUSD has received preliminary state approval and funding for construction of the first K-8 school planned for the project site, and expects to receive necessary subsequent financing from the state based on current LUSD eligibility for state funding as determined by the Office of Local Assistance (OLA). ~~4/6~~ The construction cost for this school is estimated to be ~~\$10~~ million in current dollars (Recht Hausrath and Associates 1987). ?

The LUSD may not be as successful, however, in obtaining state support for construction of two additional schools (K-8 and high school) onsite, due to state funding restrictions for school capital improvement projects, increasing statewide demand for the limited available funds, and the LUSD's possible competitive disadvantage on future applications because projected enrollment growth is relatively low. The cumulative construction cost of these two schools is estimated to be ~~\$28-30~~ million. 21.5

MODERNIZATION

Reconstruction. For the reasons indicated above, it may also become increasingly difficult to obtain state funding of needed reconstruction projects such as additions to existing schools. An increase in the effective capacity of the two K-8 schools proposed for the project site eventually may be necessary to house the number of K-8 students generated by project households should placement of Brookside students in offsite district schools prove infeasible. This growth plan could be accomplished through acquisition of portable classrooms, construction of permanent additions to these facilities, or modification of school schedules.

Given the uncertain availability of necessary state support for future capital improvement projects, the cost of building the two additional schools, which will be required to house students generated by the project, is considered to be a potentially significant adverse impact. This impact will be evaluated further in the DEIR, based on the fiscal impact analysis prepared by Recht Hausrath and Associates.

Mitigation Measures. Assessment of in-lieu fees or implementation of equivalent mitigation measures as authorized by AB 2926 would constitute legally sufficient mitigation of this impact. However, these measures may not reduce the actual impact of the project to a less-than-significant level because of the limitations of this legislation.

To effectively mitigate this impact, it may be necessary for the school district to implement additional mitigation measures such as the following:

Sp.

effect on state approval, site acquisition and school capacities.

Mitigation Measures

- o Negotiate with the LUSD to revise the project site plan, if possible, to provide a ~~larger elementary school site, as recommended by the DOE, and~~ a larger high school site. The high school site should be relocated, if necessary, to avoid a conflict with DOE standards. omit

PARKS AND RECREATION

Setting

Existing Facilities in the Project Vicinity

Existing parks and recreation facilities in the vicinity of the project site are Buckley Cove Park and Marina and Fritz Grupe Park. The 53.3-acre Buckley Cove Park area, which includes picnic and playground facilities, is located on a spur off Access Road, north of the Calaveras River and immediately west of the project site. The 20.5-acre Grupe Park, located north of the site, across Fourteen Mile Slough, is not easily accessible from the project site (Nordstrom pers. comm.).

The applicant has proposed an extension of Feather River Drive, west of I-5, which would include a bridge crossing of Fourteen Mile Slough for vehicular and pedestrian use. Such a bridge would improve access to Grupe Park from the project site.

The city currently has a master lease with EBMUD for the utility right-of-way, which extends southwest from the city limits, across the project site, to the Calaveras River. This lease may be terminated with 30 days' notice. Through sublease agreements with private companies, the city maintains a bicycle path and landscaped areas on a portion of this right-of-way that lies within city limits.

City Park Planning Objectives

The city has established a planning objective of providing "neighborhood" park space at a minimum ratio of 1 acre per 1,000 persons living within the service area (0.5-acre radius) of such a park. Neighborhood park sites are typically 5-10 acres and are located next to elementary schools, if feasible, for optimal public use of available playground or other outdoor recreational areas. The city also maintains a standard of developing larger (15- to 30-acre) "community" parks, at the same minimum

DEPARTMENT OF TRANSPORTATION

P.O. BOX 2048 (1976 E. CHARTER WAY)
STOCKTON, CA 95201

RECEIVED



MAR 29 1988

CITY OF STOCKTON
COMMUNITY DEVELOPMENT DEPT.
PLANNING DIVISION

(209) 948-7906

March 24, 1988

10-SJ-5-29.99
City of Stockton
Grupe-Brookside Community
Project/Notice of Preparation
SCH #88022316

Mr. Michael Niblock
City of Stockton
Community Development
6 East Lindsay Street
Stockton, CA 95202

Dear Mr. Niblock:

Caltrans has reviewed the Grupe-Brookside Community Project Notice of Preparation for a 1186 acre project providing 3568 dwelling units located west of I-5 at March Lane and offer the following comments:

1. The statement on Page J-3 regarding existing traffic conditions is inaccurate. The intersections of March Lane, I-5 and Benjamin Holt Drive at I-5 are experiencing delay problems during the AM peak hour. March Lane at Quail Lakes Drive is extremely congested during the PM peak hour.
2. Page J-6: Existing traffic volumes listed for I-5 are lower than those listed in the 1986 Traffic Volume Book:

.Hammer Lane to Benjamin Holt Dr	46,000 ADT
.Benjamin Holt Dr to March Ln	56,000 ADT
.March Ln to Del Rio Dr	62,000 ADT
3. The DEIR should study the impacts on I-5 between Hammer Lane and Charter Way. AM and PM peak hour volumes should be analyzed for both directions. Projections for cumulative impacts should be provided for the year 2000 and 2010. Level of Service calculations should be provided for all ramp intersections and for main line I-5 for existing, project related and cumulative developments. Additional lanes may be required on I-5 to accommodate traffic from this and other developments.
4. The DEIR should identify mitigation measures to

March 24, 1988

maintain at least a D LOS on all intersections. Significant improvements to I-5 interchanges at Hammer Lane, Benjamin Holt Drive, March Lane Del Rio Drive and Country Club Boulevard may be needed. In order to improve the operation and capacity of March Lane Interchange the weaving distance from the Plymouth Road northbound on ramp should be addressed. We have already commented on this subject in our February 5, 1988 letter to Jim Escobar (copy attached). A considerable amount of coordination is required between Caltrans, City of Stockton and the developer to solve the problems.

5. Alternate routes to accommodate north/south traffic other than I-5 should be provided. Crossings of both the Calaveras River and Fourteen Mile Sough are essential.
6. Transportation System Management (TSM) programs should be evaluated. A two acre Park and Ride lot designed to accommodate transit should be provided as close to the March Lane Interchange as possible.

Thank you for the opportunity to comment on this NOP. We look forward to working with the developer and City to provide a planning document which identifies and mitigates traffic impacts on local streets and roads as well as the State highways. Please provide a copy of the DEIR as soon as possible.

Very truly yours,



DANA COWELL
Chief, Transportation
Planning Branch

cc: P Verdoorn
H Montgomery
H Hirata
C Davisson
bcc: D MacVicar
A Kennedy

February 5, 1988

Mr. Jim Escobar
Traffic Engineer
City of Stockton
City Hall - 3rd Floor
Stockton, CA 95202

Dear Mr. Escobar:

The District traffic branch has reviewed the proposed modifications to March Lane/I-5 interchange prepared by Omni-Means. For the following reasons, we feel the plan is unworkable unless additional modifications are proposed:

- This proposal would require a sign bridge some distance in advance of the lanes for proper lane assignment. Sufficient sight distance would be needed for drivers to have adequate time to decide what lane they want and the location of that lane. However, the vertical curve where the off-ramp crosses the E.B.M.U.D. structure would prevent one from seeing the lanes until he has crossed this structure. This is far too short a distance to accomplish all this. The signing would have to be prior to the EBMUD structure.

Since traffic in the #3 lane would have to cross two lanes immediately to reach the dual left turn lane on March Lane, a no-turn-on-red posting may be needed to prevent possible conflicts. This, however, will cause the #3 lane traffic to back up far enough to block access to the #4 lane, which in turn will create a further backup since all E/B traffic will be stopped, whereas now it is basically free-flowing. This backup will eventually extend far enough to block access to the #1 & #2 lanes. With the additional traffic expected to be generated by the 1400+ Grupe development to the west, we can expect horrendous backup and congestion on the freeway itself. We are already getting some backup onto the freeway under today's conditions. What will happen when the traffic doubles?

- The northbound off-ramp has a single right turn lane which fills the dual left turn lane for Quail Lakes Drive. Shouldn't the number two off-ramp lane be an optional left or right turn in order to better fill the dual left turn lane for Quail Lakes.

- The proposed plan shows 90' of pavement width on March Lane under the Route 5 structure as existing; however, it is only 79' now. Back-of-sidewalk to back-of-sidewalk is 99' with a short retaining wall against the fills.

- The lane configuration shown between the ramps actually reduces the W/B left turn lane storage by nearly 40%. This is critical since now at times these vehicles back up at least halfway to Quail Lakes Dr. The stop bar

February 5, 1988

positions shown do not allow a proper turning radius to the on-ramps. In addition, the lanes as proposed will be difficult to fill due to the weaving required. The eastbound to northbound left turn movement is increasing and more storage will be needed. We suggest that the lanes below the freeway be striped to provide more left turn storage. Are three through lanes between the ramps necessary?

The 2-lane portion of the N/B on-ramp should be lengthened for a safer merge with the proposed dual left turn lane feeding into it. The right turn from W/B March Lane to the ramp can be made a free-right-turn with the addition of a curbed island. The island would also provide a pedestrian refuge in what would otherwise be a wide intersection. The right turn lane should be extended back to the Quail Lakes Shopping Center driveway.

A right-turn lane should be added to the S/B off ramp and the 2nd lane extended further up the ramp.

Generally, the proposed plan attempts to increase traffic capacity along March Lane with little or no increase in ramp capacity. Both off-ramps presently back up to the mainline during peak hours, and any increase in March Lane capacity should be accompanied by a corresponding increase in ramp capacity.

Some additional suggestions to improve the capacity of the interchange are:

- Relocate the existing Plymouth Road N/B on-ramp back to Alpine Avenue which should include ramp meters. Add an auxiliary lane to this on-ramp which widens to two lanes before reaching the Calaveras River. This would allow better signing to March Lane.
- Widen the EBMUD crossing structure to provide four lanes.
- Provide a surface street crossing of the Calaveras River near I-5.
- Relocate the Ryde Avenue I-5 S/B off-ramp to the same location as the N/B on-ramp. Extend the auxiliary lane to the new location.
- Lengthen the I-5 S/B off-ramp for March Lane. The length should be based on the ultimate traffic volumes during the peak hour conditions.
- Place ramp meters at the on-ramps to I-5 from March Lane.

It should be understood that these are comments generated by the traffic branch and additional comments from other branches are probable.

Mr. Jim Escobar

3

February 5, 1988

It remains our opinion the best way to relieve congestion and improve the operational characteristics of the I-5 interchanges in the City of Stockton is to provide bridge crossings to provide surface street access between Alpine Avenue and 8 Mile Road. Furthermore, the proposed Westside beltway is an excellent proposal to minimize impacts to I-5.

If you have any comments or questions, please call me at 948-7573.

Sincerely,

ALEX KENNEDY, P.E.
Chief, Traffic Branch

cc: Don MacVicar
Dana Cowell

L-38

C - 0 6 5 6 4 1

C-065641

LOCAL AGENCY FORMATION COMMISSION

LAFCO

1810 EAST HAZETON AVENUE
STOCKTON, CALIFORNIA 95208
PHONE: 209/468-3198

OF SAN JOAQUIN COUNTY

EXECUTIVE OFFICER
GERALD F. SCOTT

LEGAL COUNSEL
MICHAEL MCGREW
DEPUTY COUNTY COUNSEL

COMMISSION MEMBERS

GEORGE L. BARBER, CHAIRMAN
4TH DISTRICT SUPERVISOR
HAROLD R. NELSON, VICE-CHAIRMAN
PUBLIC MEMBER
DAVID C. ENNIS
ESCALON CITY COUNCIL MEMBER
EVELYN M. OLSON
LODI CITY COUNCIL MEMBER
DOUGLASS W. WILHOIT
2ND DISTRICT SUPERVISOR
EVELYN L. COSTA, ALTERNATE
5TH DISTRICT SUPERVISOR
STANLEY MORTENSEN, ALTERNATE
PUBLIC MEMBER
RICHARD O. HASTIE, ALTERNATE
TRACY CITY COUNCIL MEMBER

March 28, 1988

Mike Niblock
Community Development
City Hall
Stockton, CA 95202

RE: Notice of Preparation for Brookside Project

The following comments are submitted in response to your notice of preparation.

LAFCo will be a "Responsible Agency" in this matter and, consequently, will consider the City's environmental documents before approving the proposal.

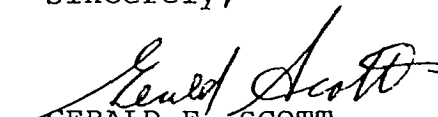
LAFCo's principal concerns relate to the orderly and efficient provision of services and the conversion of agricultural land to uses other than agricultural and related uses. Your draft EIR should discuss both immediate and possible cumulative impacts on urban services and loss of agricultural land.

The notice appears to cover those concerns and properly identifies the Williamson Act Contracts. The protest by the City should be documented.

Government Code Section 56377 provides State Policy which discourages unnecessary or premature conversion of prime agricultural land. Since the project has a phased building plan over 20 years, the EIR should consider time-phasing of annexation in accordance with State Policy. Alternative development of property already within the City should also be considered.

Please consider the above comments as LAFCo's "Responsible Agency" response in accordance with the State CEQA Guidelines.

Sincerely,


GERALD F. SCOTT
Executive Officer

GFS:jdh

cc: Gunter Konold

L-39

C - 0 6 5 6 4 2

C-065642



HENRY M. HIRATA
DIRECTOR

COUNTY OF SAN JOAQUIN
DEPARTMENT OF PUBLIC WORKS
P. O. BOX 1810 - 1810 E. HAZELTON AVENUE
STOCKTON, CALIFORNIA 95201
(209) 468-3000

EUGENE DELUCCHI
CHIEF DEPUTY DIRECTOR

THOMAS R. FLINN
DEPUTY DIRECTOR

MANUEL LOPEZ
DEPUTY DIRECTOR

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MAR 30 1988

March 28, 1988

Mr. Michael Niblock
Stockton City Planning Division
City Hall
Stockton, CA 95202

CITY OF STOCKTON
COMMUNITY DEVELOPMENT DEPT.
PLANNING DIVISION

SUBJECT: EIR 2-88 - NOTICE OF PREPARATION / EXPANDED
INITIAL STUDY - BROOKSIDE COMMUNITY PROJECT

Dear Mr. Niblock:

This department has the following comments on the above mentioned environmental document for this project:

1. The cumulative impacts of traffic on Interstate 5 between the Cross Town Freeway and Eight Mile Road should be included.
2. Loop street connection to the north (Shima and Atlas Tract areas) should be studied.

Thank you for the opportunity to comment on this project.
If you need additional information call me at (209)
468-3000.

Very Truly Yours,

R.L. Palmquist
Environmental Coordinator

Stockton Metropolitan Transit District
1533 East Lindsay Street
Stockton, California 95205
209/948-5566

March 28, 1988

Mr. Michael M. Niblock, Associate Planner
Community Development Department
Planning Division
City of Stockton
6 East Lindsay Street
Stockton, California 95202

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MAY 30 1988

CITY OF STOCKTON
COMMUNITY DEVELOPMENT DEPT.
PLANNING DIVISION

Re: Notice of Preparation/Expanded Initial Study for the
-Brookside Community Project (EIR #2-88)
-Morada Lane Project (EIR #1-88)

Dear Mr. Niblock:

In reviewing the two project studies identified above, it is apparent that traffic problems will surface if the mitigation measures are not implemented. Although both studies mention transportation systems management (TSM) programs, it is the position of the Stockton Metropolitan Transit District (SMART) that neither of these studies adequately address the transit specifications which need to be incorporated into the project plan prior to service extension.

Being that Section #66475.2 of the California Subdivision Map Act is a regulatory mechanism which encourages transit use, SMART would like to make the following suggestions to be considered during the City's evaluation of these projects:

1. There must be at least one through roadway of relatively straight design with a minimum travel lane width of 12 feet, plus sidewalks.
2. The through roadway should be connected to adjacent development. In this way, the bus can circulate between developments without having to turn into and out of individual subdivisions.

Michael M. Niblock
Planning Division
City of Stockton
Re: Brookside Community
Morada Lane
March 28, 1988
Page Two

3. In the case of the industrial parks and major employment/commercial areas, an access road without parking stalls along it must be provided to access the main bus stop near the high density areas.
4. Any subdivision walls should be offset at or near the bus stop so that pedestrians are not forced to walk through or around areas out of their way.
5. Bus turnouts of sufficient width and length should be provided.
6. A system of interior pedestrian paths or sidewalks should link the different parts of the development with one another and with the bus stop.
7. In commercial, shopping or major employment areas, a signage system should be installed for the posting of route and schedule information.
8. Commercial, retail and industrial developments should orient the front or main entrance toward the major arterial rather than toward the parking lot.
9. Passenger amenities such as lighting and shelters should be considered in the development.
10. Set-backs from the curb should allow for eventual placement of a passenger shelter.
11. The plans should identify potential park & ride lots with sites selected that will maximize access to congested areas. The plan should recommend a developer contribution toward the purchase of park & ride lots by SMART.

Michael M. Niblock
Planning Division
City of Stockton
Re: Brookside Community
Morada Lane
March 28, 1988
Page Three

12. Park & ride lots should be designed to accommodate bicyclists, pedestrians and the handicapped.
13. Park & ride lots should be chosen which afford maximum reduction in vehicle miles of travel and thereby improve regional air quality. Increase conveniences for the users, such as: convenience store, dry cleaners, florist, fast food stands, etc.
14. All access areas for buses should be strong enough to accommodate bus axle loads. Examining the site maps, the District staff feels that there are several streets which have the potential need for reinforcement.

Should you have any questions or comments concerning the above, please contact me.

Sincerely,



Elliott C. Jones
General Manager

ECJ:dc

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APR 1 1988

CITY OF STOCKTON
COMMUNITY DEVELOPMENT DEPT.
PLANNING DIVISION

MEMORANDUM

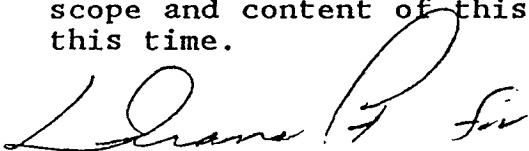
March 31, 1988

TO: John Carlson, Director of Community Development
Attention: Mike Niblock, Associate Planner

FROM: Morris L. Allen, Director of Municipal Utilities

SUBJECT: GRUPE DEVELOPMENT COMPANY (EIR2-88) - BROOKSIDE
COMMUNITY PROJECT

The Municipal Utilities Department is satisfied with the proposed scope and content of this document and has no further comments at this time.



MORRIS L. ALLEN
DIRECTOR OF MUNICIPAL UTILITIES

MLA:DC:cjh

DEPARTMENT OF BOATING AND WATERWAYS

1629 S STREET
SACRAMENTO, CA 95814-7291
(916) 445-6281



March 31, 1988

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APR 4 1988

CITY OF STOCKTON
DEVELOPMENT DEPT.
CIVIL ENGINEERING

Mr. Michael Niblock
The City of Stockton
6 East Lindsay Street
Stockton, CA 95202

Dear Mr. Niblock:

SCH#88022316: Brookside Community Project

The Department of Boating and Waterways is not a regulatory agency and does not issue any permits. However, we do review and may comment upon U. S. Corps of Engineer public notices for proposed projects and environmental documents which are submitted to us by the State Clearinghouse. For review purposes, the Department's interests lie in the following areas:

1. Potential for Navigation Hazards - To what extent might the proposed project affect safe navigation in California's waterways?
2. Beach erosion - Will the project affect the stability of coastal or bay beaches? Flood control projects, including dams and reservoirs, can have an impact on the transport of sand from rivers to coastal beaches. All coastal projects that intrude into the ocean are analyzed by Department coastal engineers.
3. Boating and Boating Facilities - To what extent might the proposed project affect existing or planned small craft harbors or launching facilities? To what extent might recreational boating activities be affected?
4. Public Trust - Placement of permanent residences or other facilities that would not be open to the public is analyzed by the Department in regard to public trust. The public trust doctrine holds that public lands and waterways are to be used for public benefit.

If you have further questions, please contact Barbara Kierbow at (916) 445-6281.

Sincerely,

A handwritten signature in cursive script that reads "William H. Ivers/bh".

WILLIAM H. IVERS
Director

cc: State Clearinghouse

L-45

C - 0 6 5 6 4 8

C-065648

DEPARTMENT OF CONSERVATION

DIVISION OF ADMINISTRATION
DIVISION OF MINES AND GEOLOGY
DIVISION OF OIL AND GAS
DIVISION OF RECYCLING



1416 Ninth Street
SACRAMENTO, CA 95814

(916) 322-5873
TDD (916) 324-2555

March 30, 1988

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APR 1 1988

STOCKTON
CITY AND DEVELOPMENT DEPT.
PLANNING DIVISION

Mr. Michael Niblock
The City of Stockton
6 East Lindsay Street
Stockton, CA 95202

Dear Mr. Niblock:

Subject: Notice of Preparation (NOP) for the Brookside
Community Project (SCH# 88022316).

The Department of Conservation has reviewed the City of Stockton's NOP for the project referenced above. The Department is responsible for monitoring farmland conversion on a statewide basis and also administers the California Land Conservation (Williamson) Act. Because the proposal involves the loss of valuable farmland and the termination of Williamson Act contracts, the Department offers the following comments.

The proposal for the Brookside Community Project will convert 1,186 acres of prime agricultural land for residential and commercial development. The project will cancel a Williamson Act contract.

The project site is on productive agricultural soil and will involve the loss of very fertile and unique peat soils. These soils are limited in extent in California, primarily found only in the Sacramento-San Joaquin Delta.

The Department is concerned with the increasing loss of agricultural land, especially prime agricultural land, statewide. The phenomenon has been quantified by a recent American Farmland Trust study, "Eroding Choices -- Emerging Issues". The Trust's study found that conversion of irrigated farmland was occurring at a rate of 44,000 acres annually in California.

Indications are that this rate is accelerating: based on our review of various project environmental documents, proposals for the development of prime agricultural land for other uses have increased dramatically in the last year, particularly in San Joaquin County. Statistics gathered by the Department of

Mr. Niblock
Page Two

Food and Agriculture indicate that approximately 10,000 acres of land, much of it prime, has been slated for development in San Joaquin County over the last seven months. The two proposals under consideration will contribute further to this trend of converting valuable farmland for non-agricultural use and will represent significant cumulative and direct environmental impacts on prime agricultural land.

While the NOP, on the whole, does a good job of addressing the impacts of the loss of prime agricultural land, no mitigation measures are addressed. Contrary to the conclusions contained in the NOP, there are mitigation measures and alternatives that would lessen the farmland conversion impact of these projects, particularly the cumulative and growth-inducing impacts. Some possibilities are:

- Direct urban growth to lower-quality soils in order to protect prime agricultural land; in other words, the Draft Environmental Impact Report (DEIR) should consider alternative sites of lower-quality agricultural soils. ✓
- Increase densities or cluster residential units to retain as much agricultural lands in production as possible.
- Protect other, existing farmland of equivalent, or better, quality through the use of Williamson Act contracts.
- Establish buffers, such as setbacks, berms, greenbelts and open-space areas, to separate farmland from urban uses.
- Consider land use planning tools, such as transfer of development rights, to permanently protect farmland.

Also, farmland trusts, which have been established by other counties, such as the Santa Barbara Farmland Trust, can be effectively used to preserve agricultural land and should be considered in the analysis of mitigation alternatives.

The Department appreciates the opportunity to comment on the NOP. We hope that the farmland conversion impacts and the Williamson Act contract issues are given adequate consideration in the DEIR. If I can be of further assistance, please feel free to call me at (916) 322-5873.

Sincerely,



Dennis J. O'Bryant
Environmental Program Coordinator

PG:DJ0:it
0037q/0001q

cc: Stephen Oliva, Chief
Office of Land Conservation

L-47

C - 0 6 5 6 5 0

C-065650

The applicant should be advised that any construction activities within the 100 year flood plain of any of the waterways in the project area will require a Streambed Alteration Agreement with our Department, pursuant to Section 1603 of the Fish and Game Code, prior to any construction activity occurring in the waterways.

The Department looks forward to reviewing the DEIR. If we can be of further assistance, please contact Patricia Perkins, Wildlife Management Supervisor, telephone (916) 355-7010.

Sincerely,

A handwritten signature in dark ink, appearing to read "James D. Messersmith", with a stylized flourish at the end.

James D. Messersmith
Regional Manager